

A R T AND I N G E N U I T Y

Made E A S Y.

In Two P A R T S.

P A R T I.

T H E

EXCISEMAN'S COMPANION:

O R,

G A U G I N G made E A S Y,

By a new *T A B L E*, fitted to the *Sliding-Rule* and *Pen*, in *Decimals*, in *Gauging* all Manner of *Vessels* with Ease and Expedition, and much shortened by the *T A B L E*.

It also teacheth to Measure any Work in *Building*, with the *Materials* belonging to the same.

With the Description and Use of an *Astronomical Instrument*, fitted for Sea and Land, performing ingenious Work; with other useful *T A B L E S* belonging to the same.

P A R T II.

Containing *Short-hand Arithmetick*, teaching *Reduction*, *Rule of Three*, *Barter*, *Loss and Gain*, from *T A B L E S* made short and easy, only by *Addition* and *Subtraction*; with short *T A B L E S* for *Reduction*; which with Ease and Expedition resolves Questions in *Trade*.

By *WILLIAM FORT*, of *Puttenham*, near *Guildford*, in *Surry*.

L O N D O N:

Printed for, and Sold by the *AUTHOR*; *J. Stone*, the Back of *Gray's-Inn*; and *Samuel Pervish*, at *Guildford*, in *Surry*, MDCCXXIX.



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The 1st Journey in Book



THE
PREFACE
TO THE
READER.

THIS the first Time I do appear in print,
I hope 'twill give the Reader good
Content ;
For here I do present unto their View
Things much for *Benefit*, it's true.
Here *Gauging* is made Easy by a *Table*,
Which *Rules* are very true and demonstrable,
For Ease and Truth the like has not yet been,
And to the World 'till now was never seen ;
For by the *Sliding-Rule* and *Multiplication*
With *Ease* they are perform'd, without *Vexation*.

A

Then

The PREFACE.

Then *Timber-Measure*, by a *Line* most new,
Is easily perform'd by *Rules*, 'tis true.
The Use of *Sliding-Rules* of many Sorts,
Are here by *Chapters* and by *Problems* wrought :
To Measure *Board*, *Tiling*, and *Painting* too,
Paving and *Brick-work*, *Timber-work* also :
Here's *Rules* for making *Vessels* to a Size,
For *Coopers*, *Bucket-Makers*, I devise.
Farmers likewise may here their *Bushels* measure,
And find also the true *Content* with *Pleasure*.
Both *Vintners*, *Tapsters*, *Victualers*, *Malsters* too
May Measure their *Designs* all in a Row.
Also by an *Astronomical-Instrument*,
I here *Astronomical-Rules* present ;
The *Prime*, *Epact*, and *Dominical Letter*,
To find all *Moveable Feasts* the better ;
The *Day* of th' *Month* and *Fixed Feasts* also,
The *Moon's Age*, *Place*, and *Right Ascension* too ;
The *Sun's Place* in the *Ecliptick*, *Right Ascension*,
All is perform'd by this my *New Invention*.
Also the *Southing* of the *Fixed Stars*,
The *Hour* of th' *Night* without all *Jarrs* ;
And many other *Requisites* most rare
Unto my friendly *Reader* I declare.
If this do give the *Reader* good *Content*,
The *Longitude* I next to him present ;
If that those *Rules* of *Longitude* they prove,
They soon, I say, with them will fall in love,
For I declare they are so excellent,
The like before did never Pen present ;
Although

The P R E F A C E.

Although by some they have been much despis'd,
Because they were alone by me devis'd ;
Although some do despise me for their sake,
And call me Fool, and also Mock do make ;
But did they know the Value of those Things,
I hope they would not be despis'd by Kings ;
Therefore for to conclude my *Verse* in *Rhime*,
Of all *Rules* else, I say they are the *Prime*,

WILLIAM FORY.



To



To all my Friends, who have honour'd me with their Subscriptions for the Book entitl'd, A R T and INGENUITY made Easy.



BEFORE Incouragement was given
the World in Darknes lay,
Had not rare Arts contrived been
we had had Night for Day ;

Rare Authors had in Silence been
had not their Books appear'd,
And we their Works had never seen,
as it may well be fear'd.

The *Mathematicks* had been wanting,
and *Mechanicks* also,
Had not their Books never been granted,
as you may also know.

Arithmetick,

To the SUBSCRIBERS.

Arithmetick, the *Art of Numbers*,
and *Geometry* also,
Had been obscure, all in *Lumber*,
and *Trigonometry* too.

Astronomy, that glorious *Art*
had in *Oblivion* lain,
With *Geography*, the *Earth Description*,
and failing on the *Main*.

Gauging also, with *Art of Measure*,
the *Art of Dialing* too,
With other *Works of Ingenuity*,
which *Men by Learning* do.

Ovid and *Horace*, noble *Verses*,
had ne'er been to our *View*,
Nor *Archimedes Works* rehears'd,
all this had been too true.

Euclid his *Elements of Measure*,
with *Gunter's Works* likewise,
Which now all *Artists* work with *Pleasure*,
with nearer *Arts* devise.

Therefore since I some *Art* have gain'd,
which will for *Benefit* prove,
In which young *Youth* will soon be train'd
in *Arts*, if they them love :

For

To the SUBSCRIBERS.

For plain and easy Demonstrations
the like before han't been ;
Also for nimble Operations,
the like have not been seen.

• Therefore my Friends, who me have honour'd
with this New Book's *Subscriptions*,
I hope the World will give you thanks,
altho' some make Objections :

Yet I believe now it is printed,
they will object no more,
Altho' it was by me invented,
as I am almost sure.

WILLIAM FORY, *Puttenbām.*



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ham	1

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del.

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dall	I	Witt-Beard, <i>Asbust</i>	I
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ADVER.

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T H E
 E X C I S E M A N ' s Companion ;
 O R,
 G A U G I N G made Easie. &c.

To Work N U M E R A T I O N, or Count any
 Number on the *Sliding-Rule*.

FIRST, the Line is Divided into two Parts ; that is, from the Beginning to the Middle, is Divided into 10 Un-equal Parts, and Numbered with 1 at the Beginning, and so on to the Middle, with 2, 3, 4, 5, 6, 7, 8, 9, and so 1 in the Middle is 10: The next 2 is 20, the 3 is 30, and so on, to 10 at the End : Those Figures from the Middle to the End, are Divided as the former ; only, whereas the First Part represented Unit-Figures, the Second Part represents Tens ; which makes 10 at the End, represent 100, and the Middle 1 represent 10.

Between the Figures, on the First Part of the Rule, are Divided into 10 Un-equal Cuts, as the
 A for-

former Figures were, which represent Tenths ; but between the Middle 1 and 10 at the End, are Divided into 10 Cuts, and each Cut, Sub-divided into 5 other Parts; the long Cuts represent Units, and every short Cut between them, represents 2 Tenths, and half a Cut 1 Tenth: Thus the Lines are Cut, and Figur'd, the whole Line representing 100.

To find out any Number, between 1 and 100.

EXAMPLE 1.

To find out 15 on the Line? This is found between the Middle 1, and 10 at the End: *First*, count 1 in the Middle for 10; then count 5 of the long strokes, and that is the Point. Where *Note*, that every 5 strokes is Cut longer than the rest, for ready distinction.

EXAMPLE 2.

To find 43 on the Line? Count the Figures Tens, as before, and the long Cuts Units; so 43 is 3 long Cuts beyond the Figure 4, between the Middle 1, and the End.

EXAMPLE 3.

To find 142 on the Line? In this Example, count 1 at the beginning of the Line for 10, and the middle 1 for a Hundred, and 10 at the end for a Thousand: *First*, count 4 long Cuts between 1 and 2 in the Middle, and 1 represents 100, and 4 long Cuts represents 40; then count 1 of the short Cuts for 2, and that is the Point: Here *Note*, between the long Cuts is but 5 short Cuts, therefore every short Cut is 2; for 5 of the Cuts is 10.

EXAMPLE 4.

But if I was to find 354 on the Line, then I count the Figure 3 for 3 hundred, of the long Cuts for



for 50 ; then as there is but one Cut, it represents 5, so Estimate between the Cut and the long Cut backward 1 fifth part, and that is the Point.

EXAMPLE 5.

But if I was to find out 642, then count the Figure 6 for 6 hundred, and 4 of the Cuts for 40 ; and one fifth part between the Cuts for 2, and that is the Point.

EXAMPLE 6.

To find out 8 and 2 Tenths ? count the whole Line 100, then the Figure 8 between the first 1 and Middle 1 represents 8, and 2 of the Cuts is 2 Tenths, which is the Point.

EXAMPLE 7.

To find out 16, 5 Tenths ? First count 1 Cut beyond the Point 15, in the first Example ; and Midway between 2 and 3 of the short Cuts, is 5 Tenths.

EXAMPLE 8.

To find 35, 8 Tenths ? The 3 between the Middle and the End, count for 30, then 5 of the long Cuts is 5, and 1 Fourth part between the long Cuts count for 8 Tenths, which is a little above half the Distance between the short Cut and the next long Cut.

EXAMPLE 9.

But if I was to find 3, and 58 of an Hundred parts, it would be the same Point ; but then, the whole Line, represents but Ten, and the Figures between the Middle 1, and 1 at the Beginning, represents but Tenths, and the Figures between the Middle 1, and the End, represents Units.

EXAMPLE 10.

But if I was to find out 24, and 35 of an Hundred parts; then the whole Line must represent 100, as in the first Example; then the Middle 1, is 10, 2, is 20, and 4 long Cuts more is 24, and the short Cut represents 50, of an Hundred parts; therefore you must Estimate a little above half the Distance between the short Cut and the next Cut backward, and that is the Point.

Thus by often Practice, you may find out any Number on the Line, either whole Number, or whole Numbers and Decimals: Which Practice will Demonstrate, better than many Words.

To Work MULTIPLICATION, by the Sliding Rule.

Set 1 at the beginning of the *Sliding-piece*, to the Multiplicand on the *Fix'd-piece*; and right against the Multiplier on the *Sliding-piece*, is the Product on the *Fix'd-piece*.

EXAMPLE 1.

To Multiply 8, by 4. Set 1 on the *Sliding-piece*, to 8 on the *Fix'd-piece*; and right against 4 on the *Sliding-piece*, is 32, on the *Fix'd-piece*.

EXAMPLE 2.

To Multiply 12, by 12. Set 1, on the *Sliding-piece*, to 1, and 2 Cuts at the beginning of the *Fix'd-piece*, for 12; then right against 1, and 2 long Cuts in the Middle, counting 12, is 144 on the *Fix'd-piece*; which is 4 long Cuts, and 2 short Cuts.

EXAMPLE 3.

To Multiply 4, and 5 Tenths; by 2; and 4 Tenths. Set 1, at the beginning of the *Sliding-piece*,
to

to 4, and 5 Cuts on the Fix'd-piece; and right against 2, and 4 Cuts on the Sliding-piece, is 11, and 25, of an Hundred parts.

EXAMPLE 4.

To Multiply 2 Shillings and 6 Pence, by 2 Shillings and 6 Pence, or half a Crown, by half a Crown: Set 1, on the Sliding-piece, to 2, and 5 Tenths; and right against 2, and 5 Tenths, on the Sliding-piece, is 6 Shillings and 3 Pence; which is 6, and 2 Tenths, and an half.

To Work DIVISION, on the Rule.

Set the Divisor on the *Sliding-piece*, to the Dividend on the *Fix'd-piece*; and right against 1, on the *Sliding-piece*, is the Quotient on the *Fix'd-piece*.

EXAMPLE I.

To Divide 24, by 8: Set 8, on the Sliding-piece, to 24, on the Fix'd-piece, and right against 1, on the Sliding-piece, is 3, on the Fix'd-piece.

EXAMPLE 2.

To Divide 37, by 8: Set 8, on the Sliding-piece to 37, on the Fix'd-piece; and right against 1, on the Sliding-piece, is 4, and a little above 6 tenths.

EXAMPLE 3.

To Divide 144, by 6: Set 6, on the Sliding-piece to 144, on the Fix'd-piece; and right against 1, on the Sliding-piece, is 24, on the Fix'd-piece.

EXAMPLE 4.

To Divide 10 Shillings, between 12 Men: *First*, 10 Shillings, is 120 Pence; which Divided by 12, the Quotient is 10 Pence.

EXAMPLE 5.

To Divide 54, 2 tenths, by 12 : Set 12, on the Sliding-piece, to 54, 2 tenths, on the Fix'd-piece ; and right against 1, on the Sliding-piece, is 4, and 2 tenths.

To Work the RULE of Three, by the Rule.

Set the first Number on the *Sliding-piece*, to the second Number on the *Fix'd-piece*, and right against the third Number on the *Sliding-piece*, is the fourth Number on the *Fix'd-piece*.

EXAMPLE 1.

If 2 Pound of Raisons cost 6 Pence, what cost 24 Pound ? Set 2, on the Sliding piece, to 6, on the Fix'd piece ; and right against 24, on the Sliding-piece, is 72 : Which Divided by 12, makes 6 shill.

EXAMPLE 2.

If a Pound of Lead cost 1 Penny half Penny, what cost 69 Pound ? The Aliquot part of 1 Penny half Penny, is 1 eighth of a Shilling ; therefore Divide 69 by 8, and the Quotient is 8 Shillings and 7 Pence.

THIS is a touch of Arithmetick, but for Instrumental Arithmetick, the Numbers should be Divided into 10, and the Cuts into 12, and the short Cuts into 4, to Work Pounds, Shillings, and Pence at once ; but such Rules ought to be 3, or 4 Foot long : Therefore shall say no more of it in this Place.

But when I Write the Use of the Geodical Staff and Perambulating Circumferenter, which performs the

the Work of the Plain Table, Theodolit Circumferenter, and Walking Wheel; then I shall shew the Use of that Instrument more plain, in Vulgar Arithmetick, and cause the Gauging Table to be drawn on the Staff, with other useful Lines; which will render the Art of Surveying to more Perfection than any Book yet in Print: With Ingenious Rules to make Maps of Lordships and Counties, which was never yet made Publick.

With an Appendix to the Book; shewing the Use of two Instruments, which will render Astronomy easie and to more Perfection, than any yet extent: Shewing any one, tho' not skill'd in the Mathematical Arts, to be acquainted with the Stars, know their Names, Right Assension, and Declination; the true Motions of the Planets, and Aspects, to Admiration.



The Gauging TABLE.

D.	T.	Area.	C.	A. G.	W. G.	C. G.	S. D.
1.	0	00	70	0 00	0 00	0 00	0001
	1	00	95	0 00	0 00	0 00	0001
	2	01	13	0 00	0 00	0 00	0001
	3	01	32	0 00	0 00	0 00	0001
	4	01	69	0 00	0 00	0 00	0 01
	5	01	76	0 00	0 00	0 00	0 02
	6	02	01	0 00	0 00	0 00	0002
	7	02	27	0 00	0 00	0 00	0002
	8	02	54	0 00	0 01	0 00	0003
	9	02	83	0 01	0 01	0 01	0003
2.	0	03	14	0 01	0 01	0 01	0004
	1	03	46	0 01	0 01	0 01	0004
	2	03	30	0 01	0 01	0 01	0005
	3	04	15	0 01	0 01	0 01	0005
	4	04	52	0 01	0 01	0 01	0005
	5	04	91	0 01	0 02	0 01	0006
	6	05	31	0 01	0 02	0 01	0006
	7	05	72	0 02	0 02	0 02	0007
	8	06	16	0 02	0 02	0 02	0007
	9	06	60	0 02	0 02	0 02	0008
3.	0	07	07	0 02	0 03	0 02	0009
	1	07	57	0 02	0 03	0 02	0010
	2	08	04	0 02	0 03	0 03	0011
	3	08	55	0 03	0 03	0 03	0011
	4	09	08	0 03	0 03	0 03	0012
	5	09	62	0 03	0 04	0 03	0012
	6	10	16	0 03	0 04	0 03	0012
	7	10	75	0 03	0 04	0 04	0013
	8	11	34	0 04	0 04	0 04	0014
	9	11	95	0 04	0 05	0 04	0015
4.	0	12	75	0 04	0 05	0 04	0016
	1	13	20	0 04	0 05	0 04	0016
	2	13	86	0 04	0 06	0 05	0017
	3	14	52	0 05	0 06	0 05	0018
	4	15	21	0 05	0 06	0 05	0019
	5	15	91	0 05	0 06	0 05	0020
	6	16	62	0 06	0 07	0 06	0021
	7	17	35	0 06	0 07	0 06	0022
	8	18	10	0 06	0 07	0 06	0023
	9	18	85	0 06	0 08	0 07	0024

The Gauging TABLE.

D.	T.	Area.	C.	A. G.	W. G.	C. G.	S. D.
5.	0	19	02	0 06	0 08	0 07	0025
	1	20	43	0 07	0 08	0 07	0026
	2	21	24	0 07	0 08	0 07	0027
	3	22	07	0 07	0 09	0 08	0028
	4	22	91	0 08	0 09	0 08	0029
	5	23	76	0 08	0 10	0 08	0030
	6	24	64	0 08	0 10	0 09	0031
	7	25	52	0 09	0 10	0 09	0032
	8	26	43	0 09	0 11	0 09	0033
6.	9	27	35	0 09	0 11	0 10	0035
	0	28	28	0 10	0 12	0 10	0036
	1	29	23	0 10	0 12	0 10	0037
	2	30	20	0 10	0 13	0 11	0038
	3	31	18	0 11	0 13	0 11	0039
	4	32	18	0 11	0 14	0 11	0041
	5	33	19	0 11	0 14	0 12	0042
	6	34	21	0 12	0 14	0 12	0043
	7	35	27	0 12	0 15	0 13	0045
7.	8	36	33	0 12	0 15	0 13	0046
	9	37	40	0 13	0 16	0 13	0047
	0	38	50	0 13	0 16	0 14	0049
	1	39	60	0 14	0 17	0 14	0050
	2	40	73	0 14	0 17	0 14	0052
	3	41	87	0 14	0 18	0 15	0053
	4	43	01	0 15	0 18	0 15	0055
	5	44	19	0 15	0 19	0 16	0056
	6	45	52	0 16	0 19	0 16	0058
8.	7	46	58	0 16	0 20	0 17	0059
	8	47	80	0 16	0 20	0 17	0061
	9	49	11	0 17	0 21	0 18	0063
	0	50	28	0 17	0 21	0 18	0064
	1	51	55	0 18	0 22	0 19	0065
	2	52	83	0 18	0 22	0 19	0067
	3	54	12	0 19	0 23	0 20	0069
	4	55	44	0 19	0 24	0 20	0070
	5	56	76	0 20	0 24	0 20	0072
	6	58	11	0 20	0 25	0 21	0074
	7	59	47	0 21	0 25	0 21	0075
	8	60	84	0 21	0 26	0 22	0077
	9	62	23	0 22	0 26	0 22	0079

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The Gauging TABLE.

D.	T.	Area.	C.	A. G.	W. G.	C. G.	S. D.
9.	0	63	63	0 12	0 27	0 22	0081
	1	65	06	0 22	0 27	0 23	82
	2	66	64	0 23	0 28	0 23	84
	3	67	95	0 23	0 29	0 24	86
	4	69	42	0 24	0 30	0 25	88
	5	70	91	0 25	0 30	0 25	90
	6	72	41	0 25	0 31	0 26	92
	7	73	92	0 25	0 32	0 26	94
	8	75	46	0 26	0 32	0 27	96
	9	77	00	0 27	0 33	0 27	98
10.	0	78	28	0 28	0 34	0 28	100
	1	80	15	0 28	0 34	0 29	102
	2	81	72	0 29	0 35	0 29	104
	3	83	25	0 29	0 36	0 30	106
	4	84	96	0 30	0 37	0 31	108
	5	86	62	0 31	0 37	0 31	110
	6	88	28	0 31	0 38	0 32	112
	7	89	92	0 32	0 38	0 33	114
	8	91	64	0 32	0 39	0 33	116
	9	93	35	0 33	0 40	0 34	118
11.	0	95	07	0 33	0 40	0 34	121
	1	96	80	0 34	0 41	0 35	123
	2	98	56	0 34	0 42	0 36	125
	3	100	32	0 35	0 43	0 37	127
	4	102	11	0 36	0 44	0 38	130
	5	103	91	0 37	0 44	0 38	132
	6	105	72	0 37	0 45	0 39	134
	7	107	56	0 38	0 46	0 40	137
	8	109	40	0 38	0 47	0 40	139
	9	111	26	0 39	0 48	0 41	141
12.	0	113	14	0 40	0 49	0 41	144
	1	115	03	0 40	0 49	0 42	146
	2	116	23	0 41	0 50	0 43	149
	3	118	87	0 42	0 51	0 43	151
	4	120	81	0 42	0 52	0 44	154
	5	122	76	0 43	0 53	0 45	156
	6	124	75	0 44	0 54	0 46	159
	7	125	72	0 44	0 55	0 46	161
	8	128	73	0 45	0 56	0 47	164
	9	130	72	0 46	0 57	0 48	166

The Gauging TABLE.

D.	T.	Area.	C.	A. G.	W. G.	C. G.	S. D.
13.	0	132	71	0 47	0 57	0 48	0.69
	1	134	83	0 48	0 58	0 49	171
	2	136	90	0 49	0 59	0 50	174
	3	138	98	0 49	0 60	0 51	177
	4	141	08	0 50	0 61	0 51	179
	5	143	19	0 51	0 62	0 52	182
	6	145	11	0 52	0 63	0 53	185
	7	147	46	0 52	0 64	0 54	187
	8	149	63	0 53	0 65	0 55	190
	9	151	80	0 53	0 66	0 55	193
14.	0	154	00	0 54	0 66	0 56	196
	1	156	20	0 55	0 67	0 57	198
	2	158	43	0 56	0 68	0 57	201
	3	160	67	0 56	0 69	0 58	204
	4	162	92	0 57	0 70	0 59	207
	5	165	19	0 58	0 71	0 60	210
	7	167	48	0 59	0 72	0 61	213
	6	169	78	0 60	0 73	0 62	216
	8	172	10	0 61	0 74	0 63	219
	9	174	43	0 61	0 75	0 64	222
15.	0	176	78	0 62	0 76	0 65	225
	1	179	15	0 63	0 77	0 66	228
	2	181	53	0 64	0 78	0 67	231
	3	183	92	0 65	0 79	0 68	234
	4	186	34	0 66	0 80	0 69	237
	5	188	76	0 66	0 81	0 70	240
	6	191	21	0 67	0 82	0 71	243
	7	193	67	0 68	0 83	0 72	246
	8	196	00	0 69	0 84	0 73	249
	9	198	63	0 70	0 86	0 74	252
16.	0	201	14	0 71	0 87	0 74	256
	1	203	66	0 72	0 88	0 75	259
	2	206	20	0 73	0 89	0 76	262
	3	208	75	0 74	0 90	0 77	265
	4	211	32	0 75	0 91	0 78	269
	5	213	91	0 76	0 92	0 78	272
	6	216	51	0 77	0 93	0 79	275
	7	219	13	0 78	0 94	0 80	279
	8	221	76	0 78	0 95	0 81	282
	9	224	40	0 79	0 97	0 82	285

The Gauging TABLE.

D.	T.	Area.	C.	A. G.	W. G.	C. G.	S. D.
17.	0	227	07	0 80	0 98	0 83	0289
	1	229	75	0 81	0 99	0 84	292
	2	231	73	0 82	1 00	0 85	296
	3	235	15	0 83	1 01	0 86	299
	4	237	89	0 84	1 02	0 87	303
	5	240	62	0 85	1 03	0 88	307
	6	243	31	0 86	1 04	0 89	310
	7	246	15	0 87	1 05	0 90	314
	8	248	66	0 88	1 06	0 91	317
	9	251	75	0 89	1 08	0 92	321
18.	0	254	57	0 89	1 09	0 93	324
	1	257	40	0 90	1 10	0 94	327
	2	260	26	0 91	1 11	0 95	331
	3	263	12	0 92	1 12	0 96	335
	4	266	11	0 93	1 13	0 98	338
	5	269	12	0 94	1 15	0 99	342
	6	271	66	0 95	1 16	1 00	346
	7	274	75	0 96	1 17	1 01	349
	8	277	70	0 98	1 19	1 02	353
	9	280	66	0 99	1 21	1 02	357
19.	0	283	64	1 00	1 22	1 04	361
	1	286	02	1 01	1 23	1 05	364
	2	289	64	1 02	1 24	1 06	368
	3	292	67	1 03	1 25	1 07	372
	4	295	71	1 04	1 27	1 08	376
	5	298	05	1 05	1 28	1 09	380
	6	301	84	1 06	1 29	1 10	384
	7	304	92	1 07	1 30	1 12	388
	8	308	03	1 08	1 32	1 13	392
	9	311	15	1 10	1 34	1 14	396
20.	0	314	28	1 11	1 35	1 15	400
	1	317	43	1 12	1 37	1 16	404
	2	320	60	1 13	1 38	1 17	408
	3	323	78	1 14	1 39	1 18	412
	4	326	98	1 15	1 41	1 20	416
	5	330	62	1 16	1 42	1 21	420
	6	333	44	1 18	1 44	1 22	424
	7	336	67	1 19	1 45	1 24	428
	8	339	93	1 20	1 47	1 25	432
	9	343	10	1 21	1 48	1 26	436

The

The Gauging TABLE.

D.	T.	Area.	C.	A. G.	W. G.	C. G.	S. D.
21.	0	346	64	1 22	1 49	1 28	0441
	1	349	83	1 23	1 51	1 29	445
	2	353	13	1 24	1 52	1 30	449
	3	356	47	1 25	1 54	1 31	453
	4	360	68	1 27	1 55	1 32	458
	5	363	19	1 28	1 57	1 33	462
	6	366	58	1 29	1 58	1 34	466
	7	369	98	1 30	1 60	1 35	471
	8	373	33	1 31	1 61	1 36	475
	9	376	83	1 33	1 63	1 37	479
22.	0	380	28	1 34	1 62	1 39	484
	1	383	75	1 36	1 64	1 40	488
	2	387	23	1 37	1 65	1 41	493
	3	390	72	1 38	1 67	1 42	497
	4	394	24	1 39	1 68	1 44	502
	5	397	83	1 41	1 70	1 45	506
	6	401	31	1 42	1 72	1 46	511
	7	404	94	1 43	1 74	1 48	515
	8	408	44	1 45	1 76	1 49	520
	9	412	03	1 46	1 78	1 50	524
23.	0	415	64	1 47	1 80	1 52	529
	1	419	26	1 48	1 81	1 53	533
	2	422	90	1 49	1 83	1 54	538
	3	426	55	1 50	1 84	1 56	543
	4	430	22	1 52	1 86	1 57	547
	5	433	91	1 54	1 87	1 59	552
	6	437	61	1 55	1 89	1 60	557
	7	441	32	1 57	1 91	1 61	561
	8	445	06	1 58	1 92	1 63	566
	9	448	80	1 59	1 94	1 64	571
24.	0	452	57	1 60	1 95	1 66	576
	1	456	00	1 62	1 97	1 67	580
	2	460	14	1 63	1 98	1 68	585
	3	463	95	1 64	2 00	1 70	590
	4	467	78	1 66	2 01	1 71	595
	5	471	62	1 67	2 03	1 73	600
	6	475	48	1 68	2 04	1 74	605
	7	479	35	1 70	2 06	1 75	610
	8	483	24	1 71	2 08	1 77	615
	9	487	15	1 72	2 10	1 78	620

The

The Gauging TABLE.

D.	T.	Area.	C.	A. G.	W. G.	C. G.	S. D.
25.	0	491	07	1 74	2 12	1 80	6625
	1	495	00	1 75	2 14	1 82	630
	2	498	96	1 77	2 15	1 84	635
	3	502	92	1 78	2 17	1 85	640
	4	506	91	1 80	2 19	1 87	645
	5	510	91	1 81	2 22	1 88	650
	6	514	21	1 83	2 24	1 90	655
	7	518	95	1 84	2 25	1 91	660
	8	523	00	1 86	2 27	1 93	665
	9	527	06	1 87	2 28	1 94	670
26.	0	531	14	1 88	2 30	1 95	676
	1	535	23	1 90	2 31	1 96	681
	2	539	34	1 91	2 33	1 98	686
	3	543	47	1 92	2 34	1 99	691
	4	547	61	1 93	2 36	2 01	697
	5	551	76	1 95	2 38	2 02	702
	6	555	94	1 96	2 40	2 04	707
	7	560	12	1 98	2 42	2 05	713
	8	564	33	1 99	2 44	2 07	718
	9	569	33	2 01	2 46	2 08	723
27.	0	572	78	2 03	2 47	2 10	729
	1	577	03	2 04	2 49	2 11	734
	2	581	10	2 06	2 50	2 13	740
	3	585	58	2 07	2 52	2 14	745
	4	589	88	2 09	2 54	2 16	751
	5	594	19	2 10	2 56	2 18	756
	6	598	24	2 12	2 58	2 19	762
	7	602	87	2 13	2 60	2 21	767
	8	607	23	2 14	2 62	2 22	773
	9	611	60	2 16	2 64	2 24	778
28.	0	616	00	2 18	2 66	2 26	784
	1	620	40	2 19	2 68	2 27	789
	2	624	83	2 21	2 70	2 29	795
	3	630	01	2 23	2 72	2 30	801
	4	633	72	2 24	2 74	2 32	806
	5	638	19	2 26	2 75	2 34	812
	6	642	68	2 27	2 78	2 35	818
	7	647	18	2 29	2 80	2 37	823
	8	651	70	2 31	2 82	2 38	829
	9	656	23	2 33	2 84	2 40	835

The Gauging TABLE.

D.	T.	Area.	C.	A. G.	W. G.	C. G.	S. D.
29.	0	660	87	2 34	2 86	2 42	0841
	1	665	37	2 36	2 88	2 43	846
	2	669	93	2 37	2 90	2 45	852
	3	674	54	2 39	2 92	2 47	858
	4	679	13	2 41	2 94	2 48	864
	5	683	76	2 43	2 96	2 50	870
	6	688	41	2 44	2 98	2 52	876
	7	693	07	2 46	3 00	2 53	882
	9	697	74	2 47	3 02	2 55	888
	0	702	43	2 49	3 04	2 57	894
30.	0	707	14	2 50	3 06	2 59	900
	1	711	86	2 52	3 08	2 60	906
	2	716	31	2 53	3 10	2 62	912
	3	721	35	2 55	3 12	2 64	918
	4	726	12	2 56	3 14	2 66	924
	5	730	91	2 58	3 16	2 68	930
	6	735	71	2 60	3 18	2 69	936
	7	740	52	2 62	3 20	2 71	942
	8	745	36	2 63	3 22	2 73	948
	9	750	20	2 65	3 24	2 75	954
31.	0	755	07	2 67	3 26	2 77	961
	1	759	95	2 68	3 28	2 78	967
	2	765	84	2 70	3 30	2 80	973
	3	769	75	2 71	3 33	2 82	979
	4	774	11	2 73	3 35	2 84	986
	5	779	62	2 75	3 37	2 86	992
	6	784	58	2 77	3 39	2 87	998
	7	789	55	2 79	3 42	2 89	1005
	8	794	54	2 81	3 44	2 91	1011
	9	799	55	2 83	3 46	2 93	1017
32.	0	804	57	2 85	3 48	2 95	1024
	1	809	60	2 86	3 50	2 96	1030
	2	814	66	2 88	3 52	2 98	1037
	3	819	71	2 89	3 54	3 00	1043
	4	824	81	2 91	3 56	3 02	1050
	5	829	91	2 92	3 59	3 04	1056
	7	835	02	2 94	3 61	3 06	1063
	6	840	23	2 96	3 64	3 08	1070
	8	845	01	2 98	3 67	3 10	1076
	9	850	46	3 02	3 69	3 12	1083

The Gauging TABLE.

D.	T	Area.	C.	A. G.	W. G.	C. G.	S. D.
33.	0	855	64	3 03	3 71	3 14	1089
	1	860	83	3 05	3 73	3 15	1095
	2	864	46	3 07	3 75	3 17	1102
	3	871	26	3 09	3 77	3 19	1109
	4	876	51	3 11	3 79	3 21	1115
	5	881	76	3 12	3 82	3 23	1122
	6	887	04	3 14	3 84	3 25	1129
	7	892	32	3 16	3 86	3 27	1135
	8	897	63	3 18	3 88	3 29	1142
	9	902	95	3 20	3 91	3 31	1149
34.	0	908	27	3 22	3 93	3 33	1156
	1	913	63	3 24	3 95	3 35	1162
	2	919	00	3 26	3 97	3 37	1169
	3	924	38	3 28	3 99	3 39	1176
	4	929	78	3 30	4 01	3 41	1183
	5	935	19	3 32	4 03	3 43	1190
	6	940	62	3 33	4 05	3 45	1197
	7	945	28	3 35	4 09	3 47	1204
	8	951	51	3 37	4 11	3 49	1211
	9	957	00	3 39	4 14	3 51	1218
35.	0	962	50	3 41	4 16	3 53	1225
	1	968	00	3 43	4 18	3 54	1232
	2	973	53	3 45	4 21	3 56	1239
	3	979	07	3 47	4 23	3 58	1246
	4	984	62	3 49	4 25	3 60	1253
	5	990	19	3 51	4 28	3 62	1260
	6	995	78	3 53	4 31	3 64	1267
	7	1001	38	3 55	4 33	3 66	1274
	8	1007	00	3 57	4 36	3 68	1281
	9	1012	63	3 59	4 38	3 71	1288
36.	0	1018	28	3 61	4 40	3 74	1296
	1	1023	95	3 63	4 42	3 76	1303
	2	1029	63	3 65	4 45	3 78	1310
	3	1035	32	3 67	4 47	3 80	1317
	4	1041	04	3 69	4 49	3 82	1325
	5	1046	76	3 71	4 52	3 84	1332
	6	1052	51	3 73	4 54	3 86	1339
	7	1058	16	3 75	4 57	3 88	1347
	8	1064	04	3 77	4 59	3 90	1354
	9	1069	83	3 79	4 62	3 92	1364

The Gauging TABLE.

D.	T.	Area.	G.	A. G.	W. G.	C. G.	S. D.
37.	0	1075	64	3 81	4 65	3 95	1369
	1	1081	46	3 83	4 67	3 97	1376
	2	1087	16	3 85	4 70	3 99	1384
	3	1093	15	3 87	4 72	4 01	1391
	4	1099	02	3 89	4 75	4 03	1399
	5	1104	91	3 92	4 77	4 06	1406
	6	1110	81	3 94	4 79	4 08	1414
	7	1116	72	3 96	4 82	4 10	1421
	8	1122	37	3 98	4 85	4 12	1429
	9	1128	60	4 00	4 88	4 14	1436
38.	0	1134	57	4 02	4 91	4 17	1444
	1	1140	55	4 04	4 93	4 19	1451
	2	1146	54	4 06	4 96	4 21	1459
	3	1152	41	4 08	4 99	4 23	1467
	4	1157	01	4 10	5 02	4 25	1474
	5	1164	61	4 12	5 04	4 28	1482
	6	1170	68	4 14	5 07	4 30	1490
	7	1176	75	4 16	5 10	4 32	1497
	8	1182	84	4 18	5 12	4 34	1505
	9	1188	95	4 21	5 14	4 36	1513
39.	0	1195	07	4 23	5 17	4 39	1521
	1	1201	10	4 25	5 20	4 41	1528
	2	1207	36	4 27	5 22	4 43	1536
	3	1213	52	4 29	5 25	4 45	1544
	4	1219	71	4 32	5 28	4 48	1552
	5	1225	91	4 34	5 31	4 50	1560
	6	1232	12	4 36	5 33	4 52	1568
	7	1238	35	4 38	5 36	4 55	1576
	8	1244	60	4 40	5 39	4 57	1584
	9	1251	58	4 43	5 42	4 59	1592
40.	0	1257	14	4 45	5 44	4 62	1600
	1	1263	43	4 47	5 46	4 64	1608
	2	1269	74	4 49	5 49	4 66	1616
	3	1276	06	4 51	5 52	4 68	1624
	4	1282	41	4 54	5 54	4 71	1632
	5	1288	76	4 56	5 57	4 73	1640
	6	1295	56	4 58	5 60	4 75	1648
	7	1301	52	4 61	5 62	4 78	1656
	8	1307	93	4 63	5 65	4 80	1664
	9	1314	35	4 65	5 68	4 82	1672

The Gauging TABLE.

D.	T.	Area.	C.	A. G.	W. G.	C. G.	S. D.
41.	0	1320	71	4 68	5 72	4 85	1681
	1	1327	36	4 70	5 74	4 87	1689
	2	1333	70	4 72	5 77	4 89	1697
	3	1340	18	4 74	5 80	4 92	1705
	4	1346	68	4 77	5 83	4 94	1714
	5	1353	19	4 79	5 86	4 97	1722
	6	1359	72	4 81	5 88	4 99	1730
	7	1366	26	4 84	5 91	5 01	1739
	9	1372	83	4 86	5 94	5 04	1747
	9	1379	04	4 88	5 97	5 06	1755
42.	0	1386	00	4 91	6 00	5 09	1764
	1	1392	60	4 93	6 02	5 11	1772
	2	1399	13	4 95	6 05	5 14	1781
	3	1405	86	4 98	6 08	5 16	1789
	4	1412	52	5 00	6 11	5 19	1798
	5	1419	19	5 03	6 14	5 21	1806
	6	1425	88	5 05	6 16	5 24	1815
	7	1432	66	5 57	6 19	5 26	1823
	8	1439	30	5 10	6 22	5 29	1832
	9	1446	02	5 12	6 25	5 31	1840
43.	0	1452	78	5 15	6 28	5 34	1849
	1	1457	55	5 17	6 31	5 36	1857
	2	1469	33	5 19	6 34	5 39	1866
	3	1473	12	5 22	6 37	5 41	1875
	4	1479	94	5 24	6 40	5 44	1883
	5	1486	76	5 27	6 43	5 46	1892
	6	1493	61	5 29	6 46	5 49	1901
	7	1500	47	5 31	6 49	5 51	1909
	8	1507	34	5 33	6 52	5 54	1918
	9	1514	23	5 37	6 55	5 56	1927
44.	0	1521	14	5 39	6 58	5 59	1936
	1	1528	06	5 41	6 61	5 61	1945
	2	1535	00	5 44	6 64	5 64	1953
	3	1541	95	5 46	6 67	5 66	1963
	4	1548	92	5 49	6 70	5 67	1972
	5	1555	91	5 51	6 73	5 71	1981
	7	1562	91	5 54	6 76	5 74	1990
	6	1569	93	5 56	6 79	5 79	1999
	8	1576	95	5 59	6 82	5 79	1008
	9	1584		5 61	6 85	5 81	1017

The

The Gauging TABLE.

D.	T.	Area.	C.	A. G.	W. G.	C. G.	S. D.
45.	0	1591	07	5 64	6 88	5 84	2025
	1	1598	22	5 66	6 91	5 86	2034
	2	1605	35	5 69	6 94	5 89	2043
	3	1612	52	5 71	6 97	5 92	2052
	4	1619	67	5 74	7 00	5 94	2061
	5	1626	82	5 76	7 03	5 97	2070
	6	1633	97	5 79	7 06	6 00	2079
	7	1641	12	5 81	7 09	6 02	2088
	8	1648	27	5 84	7 12	6 05	2097
	9	1655	42	5 86	7 15	6 08	2106
46.	0	1662	57	5 89	7 19	6 11	2116
	1	1669	87	5 91	7 22	6 13	2125
	2	1677	17	5 94	7 25	6 16	2134
	3	1684	48	5 96	7 28	6 19	2143
	4	1691	79	5 99	7 31	6 21	2152
	5	1699	12	6 02	7 35	6 24	2162
	6	1706	41	6 04	7 38	6 27	2171
	7	1713	72	6 07	7 41	6 29	2181
	8	1721	03	6 09	7 44	6 32	2190
	9	1728	26	6 12	7 47	6 35	2199
47.	0	1735	57	6 15	7 51	6 38	2209
	1	1743	04	6 17	7 54	6 40	2218
	2	1750	50	6 20	7 57	6 43	2228
	3	1757	98	6 22	7 60	6 46	2237
	4	1765	45	6 25	7 63	6 48	2247
	5	1772	92	6 28	7 67	6 51	2256
	6	1780	39	6 30	7 70	6 54	2266
	7	1787	86	6 33	7 73	6 56	2275
	8	1795	33	6 35	7 76	6 59	2285
	9	1802	80	6 38	7 79	6 52	2294
48.	0	1810	28	6 41	7 83	6 65	2304

A Table converting square Inches into Pints.

P.	Q.	Square I.	P.	Q.	Square I.
	$\frac{1}{4}$	9		$\frac{0}{4}$	179 $\frac{1}{4}$
	$\frac{2}{4}$	18	5	$\frac{1}{4}$	185
	$\frac{3}{4}$	27		$\frac{2}{4}$	194
				$\frac{3}{4}$	203
1	$\frac{0}{4}$	35 $\frac{1}{4}$		$\frac{0}{4}$	211 $\frac{1}{4}$
	$\frac{1}{4}$	44	6	$\frac{1}{4}$	220
	$\frac{2}{4}$	53		$\frac{2}{4}$	229
	$\frac{3}{4}$	62		$\frac{3}{4}$	238
2	$\frac{0}{4}$	70 $\frac{2}{4}$		$\frac{0}{4}$	246 $\frac{3}{4}$
	$\frac{1}{4}$	79	7	$\frac{1}{4}$	255
	$\frac{2}{4}$	88		$\frac{2}{4}$	264
	$\frac{3}{4}$	97		$\frac{3}{4}$	273
3	$\frac{0}{4}$	105 $\frac{3}{4}$		$\frac{0}{4}$	282
	$\frac{1}{4}$	114			
	$\frac{2}{4}$	123			
	$\frac{3}{4}$	132			
4	$\frac{0}{4}$	141	8		
	$\frac{1}{4}$	150			
	$\frac{2}{4}$	159			
	$\frac{3}{4}$	168			

A Table of Timber Measure.

S.	F. Hp.	S.	F. Hp.	S.	F. Hp.	S.	F. Hp.	S.	F. Hp.
0	0 02	0	0 11	0	0 25	0	0 44	0	0 69
1	0 02	1	0 11	1	0 25	1	0 45	1	0 70
2	0 02	2	0 12	2	0 26	2	0 46	2	0 72
3	0 03	3	0 12	3	0 27	3	0 47	3	0 73
4	0 03	4	0 13	4	0 28	4	0 49	4	0 75
5	0 03	5	0 13	5	0 29	5	0 51	5	0 76
6	0 04	6	0 14	6	0 30	6	0 52	6	0 78
7	0 04	7	0 14	7	0 31	7	0 53	7	0 79
8	0 05	8	0 15	8	0 32	8	0 54	8	0 81
9	0 05	9	0 16	9	0 33	9	0 55	9	0 82
0	0 06	0	0 17	0	0 34	0	0 56	0	0 84
1	0 06	1	0 17	1	0 35	1	0 57	1	0 85
2	0 07	2	0 18	2	0 36	2	0 58	2	0 87
3	0 07	3	0 19	3	0 37	3	0 59	3	0 88
4	0 08	4	0 20	4	0 38	4	0 61	4	0 89
5	0 08	5	0 21	5	0 39	5	0 62	5	0 91
6	0 09	6	0 22	6	0 40	6	0 63	6	0 93
7	0 09	7	0 23	7	0 41	7	0 65	7	0 94
8	0 10	8	0 23	8	0 42	8	0 66	8	0 96
9	0 10	9	0 24	9	0 43	9	0 68	9	0 98

Twelve Inches square is one Foot, at a Foot long.

S.	F. Hp.	S.	F. Hp.	S.	F. Hp.	S.	F. Hp.	S.	F. Hp.	S.	F. Hp.
0	1 0	0	1 36	0	1 77	0	2 25	0	2 77	0	3 39
1	1 03	1	1 38	1	1 79	1	2 27	1	2 79	1	3 39
2	1 04	2	1 40	2	1 82	2	2 30	2	2 82	2	3 42
3	1 06	3	1 42	3	1 84	3	2 32	3	2 85	3	3 45
4	1 08	4	1 44	4	1 86	4	2 35	4	2 88	4	3 48
5	1 09	5	1 46	5	1 89	5	2 37	5	2 91	5	3 51
6	1 11	6	1 48	6	1 91	6	2 40	6	2 94	6	3 54
7	1 13	7	1 50	7	1 93	7	2 42	7	2 97	7	3 57
8	1 14	8	1 52	8	1 95	8	2 45	8	3 00	8	3 60
9	1 16	9	1 54	9	1 97	9	2 47	9	3 03	9	3 63
0	1 18	0	1 56	0	2 00	0	2 50	0	3 06	0	3 67
1	1 20	1	1 58	1	2 02	1	2 52	1	3 09	1	3 70
2	1 22	2	1 60	2	2 05	2	2 55	2	3 12	2	3 73
3	1 24	3	1 62	3	2 07	3	2 58	3	3 15	3	3 77
4	1 26	4	1 64	4	2 10	4	2 60	4	3 18	4	3 80
5	1 28	5	1 66	5	2 12	5	2 63	5	3 21	5	3 83
6	1 30	6	1 68	6	2 15	6	2 66	6	3 24	6	3 86
7	1 32	7	1 70	7	2 17	7	2 68	7	3 27	7	3 60
8	1 33	8	1 72	8	2 20	8	2 71	8	3 3	8	3 93
9	1 35	9	1 74	9	2 22	9	2 74	9	3 33	9	3 96

Two Foot square and 2 Foot long is four Foot.

C H A P. I.

The Explanation and Use of the Table of Timber-Measure.

IN the first and second Column is the Inches and Tenths that any Piece is square; the third Column is the Feet and hundred Parts of a Foot, contain'd in one Foot long: the first and second Column is marked at the Top with *S.* signifying Inches and tenths square, as before: The third Column is marked with *F. Hp.* at the Top, for Feet and hundred Parts of a Foot, at a Foot long: The fourth and fifth Column is marked at the Top for Inches and Tenths with *S.* signifying square Piece: The sixth Column is marked with *F. Hp.* for Feet and hundred Parts of a Foot, at a Foot long, and so forth throughout the Table the Letter *S.* signifieth the Inches and Tenths square; and the Letters *F. Hp.* the Feet and Hundred Parts of a Foot, at a Foot in length. Where note, that under 12 Inches square there is only Hundred Parts of a Foot, at one Foot long, but from 12 Inches square to 24 Inches. At the End of the Table are Feet and Hundred Parts of a Foot, at one Foot long. Thus much for the Explanation, the Use followeth,

Problem 1.

There is a Piece of Timber 8 Inches 7 Tenths square, and 15 Feet 4 Tenths Long, I demand the Content of that Piece of Timber?

Note, that the Squareness of the Timber is measured by a two Foot Rule, that is divided into Inches, and each Inch is divided into 10 equal Parts; but the Length is taken in Feet and Tenths of a Foot, call'd

call'd Foot-measure, that is a Foot divided into 10 equal Parts ; and thus all Rules ought to be divided, both for Measuring and Gauging.

Example 1. at 8 Inches 7 Tenths square, and 15 Inches 4 Tenths long.

First look in the Table and find out 8 Inches and 4 Tenths under the Letter S. and right against it, in the next Column you find 49, which is 49 of an hundred Parts of a Foot, at one Foot long ; which 49 multiplied by 15 Inches 4 Tents, the Length, cutting of 3 Figures toward the Right-hand, the Figures towards the Left-hand is so many Feet, and the other are thousand Parts.

Example.

$$\begin{array}{r}
 15: 4. L. \\
 .49. S. \\
 \hline
 1386. \\
 616. \\
 \hline
 71546.
 \end{array}$$

Which is 7 Foot and 5 Tenths, or 54 of an hundred, or 446 Parts of one Thousand of a Foot.

To work this by the Sliding-Rule, set 1 in the Middle of the Rule backward to 4 Inches and 9 Tenths, and right against 15 Inches 4 Tenths you have 7 Foot 5 Tenths and almost an Half ; that is 7 Feet and a Half and somewhat more.

Example 2.

A Piece of Timber 18 Inches 3 Tenths square and 16 Feet 2 Tenths long, what is the Content ? Seek in the Table for 18 Inches 3 Tenths, under the Letter S, and right against it you find 2 F. 30 Hp. which

which is 2 Feet and 30 Hundred Parts, which multiplied as before is

$$\begin{array}{r}
 18. \ 3. \\
 2. \ 30. \\
 \hline
 5490. \\
 366. \\
 \hline
 421090.
 \end{array}$$

42 Feet and almost one tenth Part.

To work this by the Sliding-Rule, set 1 in the Middle of the Line to 18. 3. and right against 2. 3. is 42. and somewhat more, which is 42 Feet:

Example 3.

At 4 l. 8 T. square, and 16 F. 4 T. long, what is the Content?

Seek in the Table for 4 l. 8 t. and right against it is 15. which multiply by

$$\begin{array}{r}
 16. \ 4. \\
 \cdot \ 15. \\
 \hline
 820. \\
 164. \\
 \hline
 21460.
 \end{array}$$

gives

which is 2 Feet 4 Tenths and a Half.

By the Rule, set 1 in the Middle of the Sliding-piece backward to 1. 5. at the Beginning of the first Piece, and right against 16. 4. the Length is 2 Feet and almost an Half.

Note, that the Middle 1 in the Sliding-piece is always the first Number that is most proper for this Way of Measuring, and if the square Inches and Tenths be under 12 set the Middle 1 backward, but

if it be above 12, set the Middle 1 forward, and right against the Length on the Sliding-Piece, is the Content on the fixt Piece.

Problem 2.

But if the Timber be not square, but one Side wider than the other, then it must be squared thus; multiply the one Side by the other, and extract the square Root, and that is the Square: Where *Note*, that the common Way to square Timber is very false, which is by adding one Side to the other, and taking the Half for the Square.

Example 1.

There is a Piece of Timber 4 Inches one Side; and the other Side 10 Inches, what is the Square? First I multiply 10 by 4, which is 40, then look in the last Collum of the Gauging Table, for 40, or the next less to it, and in the first Collum under the Letter *D*. and that is the Square thereof.

The nearest number under 40, in the last Collum, is 39, and the Number under *D*. in the first Collum right against it is 6 Inches 3 Tenths for the Square.

But if I add 10 and 4 together it makes 14, the Half is 7, which is 7 Tenths of an Inch more than the former.

Problem 3.

There is a Piece of Timber one Side is 8 Inches 5 Tenths, and the other Side 13 Inches 7 Tenths, and 19 Feet 4 Tenths long, how many Feet?

D

First

First square the Piece (that is) multiply 8 Inches 5 Tenths and 13 Inches 7 Tenths together, which makes 116. 45. then seek that Number in the Gauging Table, under the Word *Square*, and right against it, under *D.* which is the Square Root to the Collum Square, and you will find 12 Inches 2 Tenths for the Square of both Sides, which Number seek in the Table of Timber-measure, under the Letter *S.* and right against it, under *F. Hp.* you will find, 1. 04. which multiply by 19. 4 thus; then cut off 3 Figures towards the Right Hand, and the Figures toward the Left Hand is 20 Feet, and the other is so many Parts of a Foot.

13. 7.

8. 5.

6.85

109.6

116. 45.

1. 04

19. 4

416

936

104

20. 176

To work this by the Sliding-Rule, having a single Line of Numbers adjoining to the Line twice repeated, you may extract the square Root; Thus, set 1 on the sliding Piece, to 13 I. 7 t. on the fixt-piece, and right against 8 Inches 5 Tenths on the sliding Piece you have a Number on the fixt Piece, then look on the single Line against the last Number, and on the single Line you will find 12. 2. for the Square, which enter the Table of Timber-measure, and under the Letter *S.* you will find 12 Inches 2 tenths, and right against it in the next Collum you will find 1. 04. then set 1 in the Middle of the sliding Piece to 1 and almost half a tenth, and right against 19. 4 t. on the sliding Piece, you will find 20 Foot and a little above one tenth and a half.

To

To find the Content of this last Piece of Timber by the sliding Rule, without extracting the square Root, thus.

First set 1 at the Beginning of the sliding Piece to 13. 7 *t.* on the fixt Piece, then right against 8. 5 *t.* on the sliding Piece, you must note the Number on the fixt Piece, to which noted Number set 144 on the sliding Piece; the Rule thus set right against the long Cut on the sliding Piece you have the Content on the fixt Piece.

The 1 at the Beginning of the sliding Piece set to 13. 7 *t.* then right against 8. 5 *t.* you have a Number, to which set 144 on the sliding Piece, and right against 19. 4 *t.* on the sliding Piece is 20 Foot, and a little above, as before; the noted Number is the square Inches of the Base, which divided by 144 gives the Feet and hundred Parts of a Foot, which multiply'd by the Length in Feet and tenths, gives the whole Content in Feet.

Problem 4.

How to measure Square Timber, that is very Taper.

All tapered Timber that is square is the *Frustum* of a square Pyramid, the top cut off; the Word *Frustum* signifieth cut off.

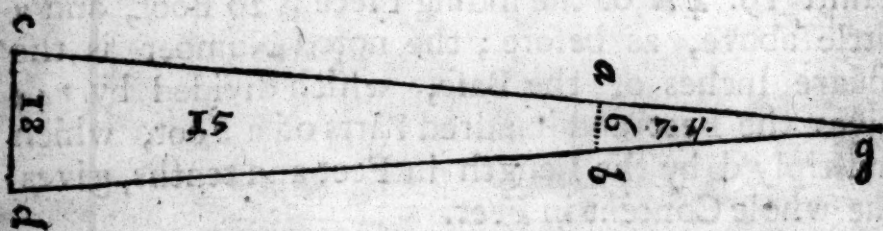
The common Way to measure such Timber is by finding the Square in the Middle, and count that for the Inches square, and so measure it as before; but the truest Way is to measure it as the *Frustum* of a Pyramid, which is thus.

First substract the Square of the least End from the greater End, and note the Difference; then say, as the Difference of the Square, is to the Length of

the Piece, so is the greater Square to the Length of the Pyramid: Then to measure a Pyramid, the Rule is, to find the *Area* of the Base, and multiply that by one third Part of the Length, and that is the Content of the Pyramid; then find the Content of the little Pyramid cut off, and substract it from the Pyramid before, and the Remainder is the Content of the Piece.

Example.

There is a Piece of Timber 18 Inches square at the great End, and 6 Inches square at the least End, and 15 Foot long, what is the true Content?



The Square of the great End *C. D.* 18 Inches, the Square of the little End *A. B.* 6 Inches, the Length of the *Frustum* 15 Foot: First I substract the little End 6, from the great End 18, and the Difference is 12; then I say, as the Difference 12, is to 15, the Length of the *Frustum*, so is 18, the great End to 22. 4 *t.* the whole Length of the Pyramid; then I multiply the Inches square, at the great End, by itself, which is call'd *Squaring*, that is, 18 by 18, and the Product is 324; which divided by 144, the Quotient is 2 *F.* 25 *Hp.* which is 2 Foot 25 of a hundred Parts of a Foot, which multiply'd by one third Part of the Length of the Pyramid 7 Inches 4 tenths, makes 16 *F.* 65 *Hp.* for the whole Pyramid.

Then

Then I measure the little Pyramid *a. b. g.* and I find that to be 62 of one hundred Parts of a Foot, which subtracted from 16 F. 65 Hp. there remains 16 F. 03 Hp. that is 16 Feet 3 of one hundred Parts of one Foot, the Content of that Piece of Timber; whereas the common Way, by Middling the Piece, is but 15 Foot for the square Inches, 18 and 6 added together makes 24, the Half for the Middle is 12; and 12 Inches square, and 15 Foot long, is but 15 Foot.

To Measure the last Piece by the Sliding-Rule, thus:

And first to find the Length of the Pyramid: Set the Difference of the square Inches 12 on the sliding Piece, to 15 the Length of the *Frustum*, on the fixt Piece, and right against, 18 the square Inches of the great End is 22 F. 4 T. the Length of the Pyramid.

Then to measure the Pyramid, set 1 on the sliding Piece to 18 on the fixt Piece, and right against 18 on the sliding Piece is 324 on the fixt Piece; then set 144 on the sliding Piece, to 324 the last Number; and right against 1 on the sliding Piece, is 2. 25. which is 2 Foot 25 of one hundred Parts; which multiplied by one third Part of the Length, that is, set 3 on the sliding Piece to 2. 25. on the fixt Piece, and right against 22. 4. t. on the sliding Piece is 16 Foot 65 of an hundred Parts; Then measure the little Pyramid as you did the great one, and subtract it from the great one, and the Remainder is 16 Foot and 3 of a hundred Parts, as before.

Problem 5.

To measure square Timber by the Line of 40, joined to the Line of Numbers; this Line begins at 4, and so to 12, right against 9 on the Numbers marked

marked with this 1 Mark, and so on to 40 at the End.

The Way to measure by this Line is to set 12 to the Length in Feet; and right against the Inches square, is the Content.

That is, set 12 on the 40 Line, to the Length on the Numbers, and right against the Inches square, on the 40 Line, is the Content on the Numbers.

Example 1.

There is a Piece of Timber 15 Inches square and 24 Foot Long, what is the Content? Set 12 on the 40 Line to 24 on the Numbers, and right against 15 on the 40 Line, is 37 $\frac{1}{2}$ on the Numbers,

Example 2.

There is a Piece of Timber 8 Inches 4 tenths square, and 19 Feet 8 tenths Long; what is the Content?

Set 12 mark $\frac{1}{2}$ on the 40 Scale to 19 F. 8 T. on the Numbers and right against 8 I. 4 T. the Square on the 40 Scale, is almost 9 Foot 3 Quarters on the Numbers.

Problem 6.

The Table of *Timber-measure* may be graduated or drawn, on the outer-Edge of a two Foot joint sliding Rule, which is much now in Use; thus, the Line of Inches and tenths being drawn on the out-Side of the Rule it is but setting the *Table of Timber-measure* on the Edge against it, so right against the Inches and tenths, on the Inch-scale, set the Feet and hundred Parts of Feet, as they stand placed in the Table, and it is done; as for Example, right against two Inches, place .02 of an hundred Parts of

a Foot, and right against 3 place .06 of an hundred Parts of a Foot; right against 4, place 11 of an hundred Parts, and so throughout the *Table*. The Line drawn thus to every Inch and tenth Part, you may measure any Piece not exceeding two Foot square. Thus, measure the Square of the Timber, not by Inches and tenths as before, but by the *Table-Line*; and see how many Feet and hundred Parts there is, then set 1 on the sliding Piece to the Feet and hundred Parts on the fixt Piece, and right against the Feet and tenths, on the Length, on the sliding Piece, is the Number of Feet on the fixt Piece.

Example.

First I measure the square, and find it 84 of an hundred Parts of a Foot on the *Timber-Line*, and the Length 18 Foot 5 tenths, then I set 1 on the sliding Piece, to 8. 4 on the fixt Piece, and right against 18 F. 5 T. on the sliding Piece, is 15 Foot and a half on the fixt Piece: Here note, that the middle 1, on the sliding Piece is to be set to the Feet and hundred Parts on the fixt Piece, for the 1 at the Beginning of the Line represents 10 of an hundred parts, 2 represents 20 of an hundred parts, 3 represents 30 of an hundred parts of a Foot; and every Cut represents Unit-Figures; so the middle 1 represents 1 Foot, 2 represents 2 Feet, and the long Cuts 10 S. and the short Cuts Units.

Example 2.

First, I measure the Square, and find it 1 Foot 28 of an hundred parts, then I set 1 in the Middle of the sliding piece, to 1 Foot 28 of an hundred parts on the fixt piece, and right against 24 Feet 7 tenths, on the sliding piece, is 31 Foot and a half on the fixt piece.

This

This last Line is the quickest and easiest to measure by of any, but being a new Contrivance, no old Rules have this Line, nor any other Book the *Table*, as I know of.

This is all the Cases I know of in *Timber-measure* that is needful, that is to measure square *Timber*, for this last Line always represents the Quantity of *Timber* there is in one Foot long, of any Squareness.

Problem 7.

To measure round *Timber*, the common Way is to girt the *Timber* in the Middle, and take the 4th part of the Line for the Square, and take one Inch out for the Rind; then extend the Compasses from 12 to the Square, and that Extent being laid the same Way from the Length in Feet, will by turning the Compasses over twice, shew the Content in Feet. This is the customary Way of measuring round *Timber*, therefore I shall give you an Example to shew the Error of this Way. There is a piece of *Timber* 13 Inches 2 tenths: When the Line is doubl'd 4 times then take out one Inch for the Rind, there remains 12 Inches 2 tenths for the Square; then extend the Compasses from 12 to 12 Inches 2 tenths, and the same Extent laid from 20 Foot the Length, will reach to 20. 7. and by turning the Compasses over, will reach to 21 Foot and something more for the Content.

But on the sliding Rule.

Set 12 on the 40 sliding piece to 20 Foot the Length on the fixt piece, and right against 12. 2. on the sliding or 40 Scale you have 21 and a little above on the fixt piece, or Numbers.

Now

For
for
fal
the
by
giv

Now let us see what we can make of this piece in true Measure: *First*, find the true *Area* of the Circle thus, multiply the Circumference or Length of the Line 48 Inches 8 tenths by 7, then divide that Product by 22, and the Quotient shall be the Diameter of the Circle 15. 5 t. then multiply half the Circumference 24. 4. by half the Diameter 7. 7. and the Product is the *Area* of the Circle, which divided by 144 gives the Feet and hundred parts of one Foot long.

$$\begin{array}{r}
 48.8 \\
 \times 7 \\
 \hline
 3416 \text{ (15.5)} \\
 22 \\
 \hline
 121 \\
 \hline
 116 \\
 \hline
 6
 \end{array}$$

$$\begin{array}{r}
 24.4 \\
 \times 7.7 \\
 \hline
 1708 \\
 1708 \\
 \hline
 144)18788(130 \\
 144 \\
 \hline
 438 \\
 432 \\
 \hline
 \end{array}$$

Which multiplied by 20 the Length makes 26 Foot, which is one fifth part more than the former: So they that sell *Timber* by such false Measure gives away one fifth part of the same.

This Error ought to be regulated and measured by true Measure, and if the Buyer cannot afford to give so much for true Measure as for the Former, the

the Seller must abate of the price, and not to sell by these false Measures; therefore I shall shew all the necessary Cases in measuring round Timber.

Problem 8.

And first by the Gauging Table.

There is a piece of Timber whose Diameter is 18 Inches and the Length 24 Foot, what is the Content? First seek the Diameter under *D.* in the *Gauging-table*, and in the next Column is the *Areas* of the Circle, which *Areas* seek under the Word *Square*, and right against it under *D.* in the first Column is the Diameter of the Square, which Diameter find out in the Table of Timber-measure, and right against it in the next Column you have the Feet and hundred parts, which multiplied by the Length, gives the Content.

Example.

Seek 18 in the *Gauging-table*, and in the next Column is 254, then seek 254 in the last Column under the Word *Square*, and right against it under *D.* in the first Column is 15 Inches 9 tenths, which seek in the Table of Timber-measure, and right against it is 1 F. 74 Hp. which multiplied by 24 gives near 42 Foot.

This Way is somewhat troublesome by seeking in so many Columns, therefore to do this more easy, first find 18 the Diameter under *D.* and in the next Column, under *Areas* is 254, which divided by 144 gives 1 F. 76 Hp. which multiplied by the Length 24, makes 42 Foot and somewhat more.

Problem 9.

To work this last Question by the Line of 40 and Line of Numbers, first seek in the *Gauging-table* for the

the Number 144 under the Word *Areas*, but because that Number is not in that Table take 143 and 19 parts of a Hundred, and right against it, under *D.* is 13 and 5 tenths, the Diameter of a Circle whose Content or *Area* is 144 near, but because it is not exact, count on the Line of 40, 13 Inches 5 tenths and a Half, and make a point with the top of a small pair of Dividers or other Needle for a Center for round Timber; the Center thus formed the Rule is this, Set this Center last found to the Length 24 Foot. and right against 18 the Diameter on the 40 Scale is 42 Feet on the Numbers, or well near.

Here note, that the Diameter of round Timber is best taken by a pair of Calipers, but if you have none, you may do it with a Line by Girding round in the Middle of the Stick, and allowing 4 Inches of the Line for the Rind, then to find the true Diameter do thus, set 22 on the sliding piece to 7 on the fixt piece, and right against the Girt on the sliding piece, is the Diameter on the fixt piece.

Example.

The Length of the Girt being 52 Inches, from which I take 4 for the Rind, the Remainder is 48, then set 22 on the sliding piece to 7 on the fixt piece, and right against 48, on the sliding piece is 15 Inches 3 tenths for the Diameter; then the Length being 20 Foot set the Center 13. 5 tenths $\frac{1}{2}$, the fixt Diameter on the 40 Scale to the Length 20 on the Numbers, and right against 15 Inches 3 tenths on the 40 Scale is 25 Foot and a half on the Numbers.

To do this by the Circumference ; thus,

The Center or Circumference of a Circle whose *Area* is 144, is near 42. 54 of a Hundred, this Center is found a little above 4 Inches and 2

tenths and a half at the Beginning of the 40 Scale, then set this Center on the 40 Scale to 20, the Length on the Numbers, and right against 48, on the 40 Scale, is 25 Foot and a half on the Numbers.

Problem 10.

To measure round taper'd Timber, it being the Frustrum of a Cone, the Top being cut off.

There is a piece of Timber, whose Diameter, at the great End, is 24 Inches 4 tenths, and the Diameter, at the least End, is 15 Inches 6 tenths, and the Length 16 Foot, what is the true Content of this piece?

First, find the Content of the whole *Cone* thus; and first for the Length, say, as the Difference of the Diameter is to the Length of the Piece, so is the Diameter of the great End, to the Length of the whole *Cone*, the Difference of the Diameter, is 8 Inches 8 tenths; then say, as 8 Inches 8 tenths is to the Length, 16 Foot, so is 24. 4 t. to 44. 3 t. the whole Length of the *Cone*, from which subtract the Length of the *Frustrum*, and the Remainder will be 28 Inches 3 tenths, for the Length of the little *Cone*; then seek 24. 4 t. in the *Gauging-table*, and the *Area*, in the next Collum, is 467, which divided by 144, is 3. 24 t. that is, 3 Foot 24 of an hundred parts, which multiplied by 14. 7 t. one third part of the Length of the whole *Cone*, is 47 Foot 6 tenths, the Content of the whole *Cone*; then measure the little *Cone*, look in the Table of *Gauging*, for the Diameter 15. 6 t. and the *Area* is 191, which divided by 144, is 1 Foot 32 of an hundred, which multiplied by 9 Inches 4 tenths, the third part of the Length, makes 12 Foot 4 tenths, which subtracted from 47.

6 *t.* leaveth 35 Foot 4 tenths; the Content of that piece of Timber.

The common Way to measure this piece, is by adding 24. 4 *t.* and 15. 6 *t.* together, and take the Half for the mean Diameter, which is 20 Inches, then set 13. 5 *t.* on the 40 Scale to 16 Foot, the Length on the Number, and right against 20, on the 40 Scale, is 34 Foot and a Half, on the Numbers, differing from the former near one Foot. But if you Girt the Middle of the piece with a Line, the Girt will be found to be 63 Inches, the fourth part is 15 Inches 7 tenths, for the Square; then set 12 on the 40 Scale, to 16 Foot, the Length, and right against 15. 7 *t.* on the 40 Scale, is 27 Foot, on the Number; which is less than true Measure 8 Foot and almost an Half.

These are all the necessary Cases, in square and round Timber, both by true Measure, and false, with the Differences between them, which will inform the ingenious Artist in measuring any piece whatsoever.

C H A P. II.

Shewing the Use of the Sliding Rule, in Measuring Board, Glafs, Paving, Tileing, Painting, &c. And first for Board, which is measured by the Foot, the Length is taken by Feet and tenths, and the Wedth is taken, by Inches and tenths.

Problem 1.

THERE is a Board 8 Inches 7 tenths wide, and 17 Foot 4 tenths long, what is the Content?

Set 12 on the Sliding-piece to 8 Inches 7 tenths, the

the Wedth of the Board, and right against 17 Feet 4 tenths, the Length, on the Sliding-piece, is 12 Foot and a Half, on the fixt-piece.

Problem 2.

There is a Board 16 Inches 8 tenths wide, and 22 Feet 7 tenths long, what is the Content ?

Set 12 on the sliding-piece, to 16. 8 t. on the fixt-piece. and right against 22. 7 t. on the sliding-piece, is near 32 Foot, on the fixt-piece.

Problem 3.

The Wedth of any Board being given, to find how much will make a Foot.

There is a Board 7 Inches 4 tenths wide, how much in Length will makes 1 Foot ?

Set 7 Inches 4 tenths to 144, on the fixt-piece, and right against 1, on the sliding-piece, is 19 Inches 5 tenths, which make a Foot.

Problem 4.

The Wedth of a Board given, to find how much there is in one Foot long ?

The Wedth 18. 5 t. there is 1 Foot and a little above an Half in one Foot long. Set 12 on the sliding-piece, to 18 Inches 5 tenths, on the fixt-piece, and right against 1 Foot, on the sliding-piece, is 1 Foot 54 of an hundred Parts, on the fixt-piece.

Problem 5.

The Wedth of a Board given, to find what Length will make any Number of Feet?

The Wedth 9 Inches 4 tenths, how much in Length will make 7 Foot ?

Set 12 on the sliding-piece, to 9 Inches 4 tenths, on the fixt-piece, and right against 7 Foot, on the fixt-piece, is 9 Foot, on the sliding-piece.

Example 2.

17 Inches 4 tenths wide, what Length will make 8 Foot ?

Set 12, on the sliding-piece, to 17. 4 t. on the fixt-piece, and right against 8, on the fixt-piece, is a little above 5 and a Half, on the sliding-piece.

Problem 6.

To measure a Board, in Form of a Triangle, that is, having three Corners, the Rule is this,

Multiply the whole Base by Half the Perpendicular, and the Product is the Content.

There is a Board whose Base is 24 Inches 7 tenths, and the Perpendicular 28 Inches 4 tenths, what is the Content in Feet ?

Multiply 24. 7 t. by 14. 2. the half Perpendicular, and it makes 350. 74. that is, 350 square Inches and 74 of one hundred parts of an Inch, which divided by 144, the square Inches in a Foot, gives 2 Foot and almost an Half.

To work this Problem by the Sliding-Rule.

Set 288, the Double of 144, on the Sliding-piece, to the whole Base 24. 7 t. on the fixt-piece, and right against 28. 4 t. the whole Perpendicular, on the Sliding-piece, is almost 2 Foot and a Half, on the fixt-piece.

Problem 7.

The Length of a Triangle Board being given in Feet, and the Width of the great End in Inches, to find

find the Content? Set 24, on the Sliding-piece, which is the Double of 12, to the Length of the Triangle, and right against the Wedth, in Inches, is the Content. Here take this for a general Rule, the first Number is counted on the Sliding-piece, which is set to the second Number on the fixt-piece, the third Number is counted on the Sliding-piece, and the 4 Number is found on the fixt-piece, except the Pieces are nominated.

Example.

The Length of a Triangle 34 Foot 2 tenths long, which is the Perpendicular, and the Wedth 16 Inches 5 tenths, what is the Content in Feet? As 24 is to 16 Inches 5 tenths, the Wedth, so is 34 Feet 2 tenth, the Length, to 23 Foot and a Half. *Here note*, that I use the Double of 12 instead of 12, because I use the whole Base, and whole Perpendicular, which will make Double of the Triangle, for the Length of the Base, and Perpendicular; multiplied together, is equal to a long Square, as you may here see.



The two out-side Triangles are equal to the two inside ones, and all 4 equal to the long Square, the Length of the Base and Perpendicular multiplied together.

Problem 8.

To measure a Circle and find the Area thereof.

This is Done by the *Gauging-table*, that is, seek the Diameter, under *D.* and right against it, under the Word *Area*, is the Content.

Example.

The Diameter of a Circle 24 Inches 7 tenths, what is the *Area* or Content? Seek 24. 7 tenths under *D.* and right against it, you have 479 Inches, and 35 of an hundred Parts of an Inch; which divided by 144, gives Feet, by the *Sliding-rule*; having found the *Area*, by the *Gauging-table*, set 144 to it, and right against 1 is the Feet required: Set 144 to 479, and right against 1, is 3 Foot and a little above a Quarter.

The *Gauging-table* runs to 48 Inches Diameter, but if you have a Circle above 48 Inches Diameter, then the Rule is this.

Multiply the Diameter by 22, and divide that Product by 7, the Quotient shall be the Circumference of the Circle, which by the *Sliding-rule* is thus; the Diameter being 62 Inches, set 7 to 22, and right against 62, is 194; this Number is too big to find on the Rule, therefore mark the Point, to which set 2 on the *Sliding-piece*, and right against 1, on the same Piece, is another Number, which is Half the Circumference; then on the *Sliding-piece* find 31, the half Diameter, and right against it, on the fixt-piece, is the *Area*, to which set 144, on the *sliding-piece*, and right against 1, on the same Piece, is the Content in Feet, 20 and somewhat more.

(42)

To do this by the Pen, first
I multiply the Diameter by
then divide by 7, and the
Quotient is 194
then I half
that, which is 97
which multiplied by 31
the half of the Diameter, the
Product is 3007 square Inches,
which divided by 144, the
Quotient is 20 Foot and 127
Inches, which is something a-
bove 3 quarters of a Foot.

62
22

124
124

7)1364(194
7

66
63

34
28

40

Problem 9.

To measure an Oval.

Multiply the longest Diameter by the Shortest,
from which Product extract the square Root, then
seek that Root in the *Gauging-table* under *D.* and right
against it, under the Word *Area*, is the *Area* re-
quired.

Example

The longest Diameter 22, the shortest Diameter
16, which multiplied together make 352. the
square Root thereof, is 18.75. which seek in the
Gauging-table, under the Letter *D.* and right against
it, in the next Collum, is 274. and 75 of an hun-
dred Parts, the Content of this Oval.

To work this last *Problem* by the *Sliding-rule* and
Gauging-table together; first set 1 to the greatest Di-
ameter 22, then right against the least Diameter 16,
is 352, which seek in the *Gauging-table*, under the
Word *Square*, or the nearest Number to it, and
under

Yard
and
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Yard
Bu
foot
centh
Widt
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Hal
Pav
by thi

under *D.* in the first Collum, is 18. 7. the square Root ; and in the next Collum, under *Areas*, is 274 and 75 of an hundred Parts, the *Area* of the Oval.

Problem 10.

To Square or find the Root of any Number under 48, the greatest Root in the Table of Gauging.

And first, to find the Square the Root being 23. 5. find the Number 23. 5. under *D.* in the first Collum, and right against it, in the last Collum, under the Word *Square*, is 552, for the Square.

But if you want the Root, seek the next nearest Number to it, under the Word *Square*, and under *D.* in the first Collum, is the Root. To find the Root of 2012, seek 2008, the nearest Number, in the last Collum, and in the first Collum, under *D.* is 44. 8. for the Root.

Problem 11.

Paving, Painting, Ceiling, and Rendring, is measured by the Yard, divided into an hundred Parts, the Width and Length taken thereby.

There is a Room to be Ceiled, whose Length is 5 Yards and 43 of an hundred Parts long, and 3 Yards and 74 of an hundred Parts wide, what is the Content ? Set 1 to 5. 43. and right against 3. 74. is 20 Yards.

But for want of such a Yard, you must use a two foot Rule, and take the Dimensions in Feet and tenths : The Length 16 Feet 4 tenths, and the Width 12 Feet 3 tenths, set 9 to 16. 4. the Length, and right against 12 Foot 3 tenths, is 22 Yards and a Half

Paving, Painting, Ceiling, and Rendring, is measured by this Rule, but with this Difference, in taking the

Dimensions; if it be one single Piece, the former Rule serves, but if it be side-Walls, and lieth all round, Measure with a Line all round the Room, and count it either by Yards or by Feet for one Side, and the Height for the other Side, and then work as before, thus.

The Girt round the Room 47 Feet 3 tenths, and 9 Feet 7 tenths high. Set 9 to 47. 3 *t.* and right against 9 Feet 7 tenths, the Height is 51 Yards, the Content. But if there be any three cornered Piece, it must be measured as a *Triangle*, the Base 21. 2 *t.* and the Perpendicular 18. 5 *t.*

Set 2 to 21. 2 *t.* and right against 18. 5 *t.* is a Number, to which set 9, and right against 1 is 21 Yards.

Problem 12.

To Measure Tileing.

Tileing is measured by the Square, consisting of 100 square Feet, that is, 10 Foot in Length, and 10 Foot in Breadth; the Dimentions taken by Feet and tenths; that is, take a Line and throw over the Ridge, and let a Plummets hung at the End slide down to the *Ovis*, and with the other End, and your Hand, touch the other side *Ovis*, then the Length of the Line, measured by Feet and tenths, count for one Side; then measure the Length of the Ridge in Feet and tenths, and if it be to *Gable-Ends*, count that for the other Side; but if there be *Hips*, then measure the *Ovis* on both Sides in Feet and tenths; which three Numbers, the Length of the *Ridge* and both *Ovis's* add into one Sum, which Sum divide by 3, and the Quotient is the other Side; then set 10 on the Sliding-piece to the longest Side, and right against the other Side is the Number of Squares.

Example 1.

The Length of both Roofs height 28 Feet 8 tenths, and the mean Length 37 Feet 2 tenths. Set 10 to 37 Feet 2 tenths, and right against 28 Feet 8 tenths, is 10 Square 7 tenths.

But by the Pen, multiply
by

f.	t.
37.	2.
28.	8.
2976	
2976	
744	

The Product is

10. 71. 36
10. 71 Feet, then cut off 2 Figures towards the right Hand, and the Figures towards the left Hand is 10 Square, and the Figures towards the right Hand is 71 Feet, which is 7 tenths and 1 of an hundred Parts as before.

To Measure the Hip-End.

Measure the *Ovis* for one Side, and from the Middle of the *Ovis* to the *Ridge* for the Perpendicular or other Side, which multiplied as before, and divided by two, the Quotient is so many Feet; then cut off 2 Figures towards the right Hand as before; the Figures towards the left Hand is Squares, and the Figures towards the right Hand Feet.

Example 2.

The Base 20 Feet 2 tenths, and the Perpendicular 16 Feet 4 tenths: These 2 Numbers multiplied together make 331, which divided by 2, makes 165, which is 1 Square 65 Feet.

To work this by the Sliding-Rule.

Set 10 on the Sliding-piece to 20. 2 t. and right against 16. 4 t. is 331, to which Number set 2 on the Sliding-piece, and right against 1 on the same Piece is 1. 65, which is 1 Square 65 Feet.

Problem 13.

To measure Glaziers Work.

This is measured by the Foot, the Dimentions taken in Feet and hundred Parts.

There is a Window whose Length is 4 Foot 25 of an hundred Parts, and the Height is 2 Foot and 37 of an hundred Parts.

Multiply these two Numbers together, and cut off 4 Figures towards the right Hand, and those towards the left are Feet; these 2 Numbers multipli'd together makes 10 Foot and 17 of an hundred Parts.

To work this by the Sliding-Rule.

Set 1 on the Sliding-piece to 4 Foot 2 tenths and a half, which is 25 of an hundred Parts, on the fix-piece, and right against 2 Foot 37 of an hundred Parts, which is 3 tenths and 3 quarters of a tenth, on the sliding-piece, is a little above 10 Foot on the fix-piece.

Problem 14.

To measure Brick-work.

This is measured by the Rod, of 16 Foot and a Half square. The standing Thickness a Brick and a Half thick; and if a Wall be any other Thickness, it must be reduced to a Brick and a Half; as for Example.

There

There is a Wall 14 Foot long, 7 Foot high, and 3 Bricks thick; first multiply the Height 7 Foot, by the Number of half Bricks thick, which is 6, that Product divided by 3, the Quotient is the Reduc'd Height; so the Height 7, multiplied by 6, the Number of half Bricks thick in three Bricks, the Product is 42, which divided by 3 gives 14 in the Quotient, for the reduced Height; which multiplied by 14 Foot long, the Product is 196, which Product find in the *Gauging-table*, under the Word *Area*, and under the Collum of Corn Gallons, and right against 196, the *Area*, is 73 of an hundred Parts of a Rod in that Wall.

To find the reduced Height, by the Sliding-Rule thus.

Set 3 the standing Thickness, to the Height 7 Foot, and right against 6, the half Bricks in 3 Bricks thick, is 14 the reduc'd Height; which multiplied by the Length, as before, is 196 Feet, which by the *Gauging-table* is 73 of an hundred Parts of a Rod.

Example 2.

There is a Wall whose Length is 27 Foot 4 tenths, and 9 Foot 4 tenths high, and 2 Bricks and a Half thick, how many Rod?

First to find the reduced Height: Set 3 to the Height 9 Foot 4 tenths, and right against 5, the Number of half Bricks in the Wall, is 15 Foot almost 7 tenths, for the reduc'd Height, which multiplied by 27 F. 4 t. makes 430 Feet; then find 430, or the next nearest Number to it, under the Word *Area*, in the *Gauging-table*, and right against it, under Corn-Gallons, is 1 Rod 57 of an hundred Parts of a Rod in that Wall.

Example 3.

But if it be an House to be measured, the lower Story 2 Bricks and a half, the middle Story 2 Bricks, and the upper Story one Brick; the lower Story 8 Foot high, the middle Story 6 Foot 5 tenths, the upper Story 6 Foot high, and the Length of the House 24 Foot, and the Width of the House taken within Side 16 F. 5 t.

First, double the Length 24 Foot, and it is 48 for both Sides; then double the Width 16. 5. and it is 33, for the Ends, which added together, makes 81, for the common Length for all the Stories.

The common Length 81, the lower Story 8 Foot high, and 2 Bricks and a half thick; 8. 0 t.

The reduced Height	13. 4
--------------------	-------

The second Story 2 Bricks thick	6. 5
---------------------------------	------

The reduced Height is	8. 7
-----------------------	------

The upper Story 1 Brick thick	6. 0
-------------------------------	------

The reduced Height is	4. 0
-----------------------	------

Then to find the Content of the lower Story, the Length	8. 1
--	------

The reduced Height	13. 4
--------------------	-------

	324
--	-----

	243
--	-----

	81
--	----

	1085. 4
--	---------

The Content in Feet	1085. 4
---------------------	---------

1085 Foot 4 tenths, which seek in the *Gauging-table*, under the Word *Areas*, and right against it, under Corn-Gallons, is 3 Rod 97 of an hundred Parts of a Rod, which set down for the Content in the lower Story.

The second Story	81
The reduced Height	8.7
	567
	648

704.7

Content 704 Foot 7 tenths ; which seek in the *Gauging-table* under *Areas*, and right against it, under Corn-Gallons is 2. 57 of an hundred Parts, which set under the former common Length of the upper Story

The reduced Height	4

Content	324
---------	-----

324 Feet, whice seek in the Table as before, and it is 1 Rod, 18 of an hundred Parts, which set under the former.

The Content of each Story.

	R.	Hp.
Lower Story	3	97
Second Story	2	57
Upper Story	1	18

Content of all the Stories	7 72
----------------------------	------

7 Rod 72 of an hundred Parts of a Rod, which wants only 3 of an hundred Parts of three Quarters of a Rod more, for the whole House.

Here Note, that if the Doors be large, and Windows large, and the Workman finds both Materials and Workmanship ; that then the Doors and Windows ought to be Reduced out ; but if the Workman only finds Workmanship, then no Reduction to

be made, but this is as the Master and Workman bargains for it.

This is the way to Measure the Outward Walls with its Content, but to Measure the Chimneys, the Rule is this ; Girt with a Line across the Fire-place, and all round both *Jams* ; and if the Chimney be set in the Middle of the House, add the back to it, which is equal to the Fore front of the Fire-place, and thickness of both *Jams*, and count that for one Side, at a Brick and a half thick, the Standard thickness ; which side Multiply by the height of the Room, and that will be the Content in Feet, which set down : In this manner Measure all the Chimneys or Fire-Places in the house, which add into one Sum, which Number of Feet seek in the Gauging Table as before, and that will give the content in *Rods* and hundred parts, which add to the former with the *Shafts* of each Chimney, and that will give the content of the whole House.

But to Measure the *Shaft* of the Chimney, girt round the top of the Chimney with a line and round the lower end of the *Shaft*, which two girts add together and take the half thereof for one Side, and the length of the *Shaft* for the other, which Multiplied together, gives the content in Feet ; which in the Gauging-Table as before, Gives the Hundred-parts of a *Rod* ; all these Measures added together gives the content of the whole House. *Note*, If there be any Partition Wall of Brick, that must be Measured and added to the other, and If there be a *Gable-End*, it must be reduced and measured as a Triangle.

According to the second *Example* of the 12 *Problem*, in measuring Tileing, all which things drawn into one Sum, gives the whole content in *Rods* and hundred parts.

Problem 15.

Problem 15:

To measure Stone-work.

This is Measured by the *Perch*; of which, 16 *Perch* makes a *Rod*; or one is the 16th part of a *Rod*, that is 16 foot and a half long, and 1 foot 3 of an hundred parts of a foot high, makes a *Perch*.

First find the content in Feet as in brick-work, then that content Multiply by 2, and Divide by 33, and the Quotient will be *Perches*.

Example I

There is a Wall 36 foot 5 tenths long, and 5 foot 5 tenths high, what is the content in *Perches*?

Multiply
by

F. t.

36. 5

5. 5

1825

1825

Product is

200. 75

Which Multiply by

2

Divide

33) 401. 50 (12

33

16

The content in *Perches*, is
2. 16 of an hundred parts
of a *Perch*.

71

66

55

33

220

198

G 2.

But

But if you find the Content in *Rods*, and hundred parts as in Brick-work, and Multiply then by 16, will give *Perches*.

Example 2.

The Content in *Rods* is
Which Multiplied by

R. Hp.
6. 25
16

3750
625

Gives one hundred *Perches*.

100. 00

Problem 16.

The Price of the *Rod* or *Perch* being given, to find the value of the Decimal Parts thereof?

The Price of one *Rod* of Brick-work being 22 Shillings, what is the price of 37 of an hundred parts of a *Rod*?

Multiply 37 the Decimal parts
by

37
22

Then Cut off 2 Figures towards the Right hand, and the Figure towards the Left hand is Shillings; then Multiply that Decimal by 12 and cut off as before, and the Figures towards the Left hand is Pence; then multiply the Decimal by 4 and cut off as before, and the Figures towards the Left-hand is Farthings; see the Work.

74
74
S. 8. 14
12

28
14

P. 1. 68

F. 2. 72

Problem 17

Problem 17.

To Measure Carpenters Work.

Carpenters work is measured by the Square, as *Tiling* was; therefore for *Roofing*, the same Rules will serve, and for *Partitioning*; But for *Flooring*, there is an Allowance to be made for the End of the *Joynt* laid into the Wall, which makes 18 Inches more than the wedth of the *Floor*; therefore take one Example by the *sliding Rule*.

The wedth of the *Floor*, 9. 7 t. the length that way the *Joynt* goes 8. 2 t. to which I add 1. 5 t. which makes 9. 7 t. for the length of the Room and Ends of the *Joynt*, laid into the Wall.

Set 10 in the Middle to 9. 7 t. and right against 9. 7 t. is 94 of an hundred parts of a Square; but by the Pen, multiply 9. 7 t. by 9. 7 t. and the Product is 94.09, then cut off 2 Figures towards the Right-hand for Fractions, and the Figures on the Left-hand is 94 foot, or 94 of an hundred parts of a Square, as before.

This is the most easie way in measuring Building both by the Pen or *sliding Rule*; therefore I shall end this Chapter with one more Problem, and that is, to find the length of *Rafters*, in *Roofing*.

Problem 18.

The Breadth of an House 30 Foot, the Ends Square, the length of the Rafters at true Pitch, are as in this Table.

	F.
Whole breadth	30
The half breadth	15
Length of the Rafters	22½
Hip Rafters	27
Perpendicular	17
	To

To find the length of Rafters, and Hips, in any other House, as suppose 16 Foot, by the Sliding-Rule?

Set the whole breadth 30 in the Table, to the breadth of the Second House 16.

And right against the half breadth is 8

And right against $22\frac{1}{2}$ is 12

And right against 27 is 14.5 t.

And right against 17 is 9.2

That is 8, the half breadth of the Second House, 12 the length of the *Rafters* 14.5 the *Hip Rafters*, and 9.2 the *Perpendicular height*, between the *Principal Rafters* all at one setting of the Rule, and by setting the common breadth 30, to the breadth of any other House; the Rule thus set, look right against the Numbers in the first Table, will shew the length of the *Hips & Rafters* as before; but in *Roofing* large Square Roofs, the *Platform* must be first drawn, and then Divide the *Roofs* into Equal Portions, as the Artift thinks fit, and work for each Roof as before.

Thus much for Measureing.

In the next Chapter, I shall go on to the thing first Intended; that is, to shew the use of the Table of Gauging, in Measureing Open Vessels and close Casks; and to find the want thereof, and finish with the use of the Table, in the ready making *Buckets, Bushels, Barrels*, and other Vessels.

C H A P. III.

Problem I.

To find the Content of open Vessels, in Ale, Wine, or Corn-Gallons.

And first to measure a square Vessel.

Example I.

THERE is a Vessel 34 Inches 6 tenths square, and 18 Inches 2 tenths deep, how many Ale Gallons ?

First seek 18. 2 t. under *D.* for Diameter, and under *Square*, right against 18. 2 t. is 331; then seek 331 under *Area*, or the nearest Number to it, and right against it, under *A. G.* is 1 Gallon 16 of an hundred Parts of a Gallon, which multiplied by 18. 2 tenths deep, gives 21112; then cut off 3 Figures towards the right Hand for Fractions, and the Figures towards the left Hand is 21 Gallons, 11 of an hundred Parts of a Gallon.

Here note, that the Number found in the *Gauging-table*, under *A. G.* is one Gallon 16 of an hundred Parts of a Gallon at one Inch deep; which multiplied by 18. 2 t. the Depth, and cutting off 3 Figures for Fractions, leaves 21 Gallons; and the 2 first Figures in the Fractions, next the Gallons, is hundred Parts of a Gallon.

To work this Problem by the Sliding-Rule.

Having found by the *Gauging-table*, 1 Gallon 16 of an hundred Parts of a Gallon, at an Inch Deep; Set

1 in the Middle of the Sliding-piece, to 1 I. 16 Hp. which is 1 I. 16 Hp. on the fixt-piece, and right against 18. 2 t. on the sliding-piece, is a little above 21 Gallons as before: But if you want the Content in Wine, or Corn Gallons, instead of finding the Content in Gallons and hundred Parts, at an Inch deep; under *A. G.* for Ale Gallons, you must look under *W. G.* for Wine Gallons, or *C. G.* for Corn Gallons, and right against 331, under *Areas*, you have 1 G. 42 Hp. for Wine, and 1 G. 21 Hp. for Corn, which multiplied by 18. 2 t. gives either Wine, or Corn; that is, if you multiply Wine Gallons by the Depth, the Product is Wine; but if Corn, the Product will be Corn Gallons.

Example 2.

There is a Vessel 34 I. 8 t. square, and 24 I. 3 t. deep, how many Wine Gallons will it hold?

Seek in the *Gauging-table*, under *D.* for 34. 8 t. and right against it in the last Column, under *Square*, is 1211, which seek in the Column under *Areas*, and right against it, under *W. G.* is 5 G. 25 Hp. which multiplied by 24. 3 t. gives 127 Gallons and 57 of an hundred Parts, or a little above half a Gallon.

Problem 2.

To gauge Round Vessels, in Form of a Cillender, standing on one End.

First, find the Inches and tenths Diameter, then seek that Diameter, in the *Gauging-table*, under *D.* and in the Column, under *Areas*, is the solid Inches and hundred Parts, at one Inch deep, which multiplied by the Number of Inches and tenths deep gives the solid Inches in the Vessel, which divided by the Number of Inches in *Ale, Wine, or Corn Gallons*, will shew the Number of Gallons.

Example I.

At 25 Inches 7 tenths Diameter, and 32 Inches 2 tenths deep, how many Ale Gallons?

First, seek 25 Inches 7 tenths in the *Gauging-table*, under *D.* and under *Areas*, in the Angle of Meeting, is 519 very near, which multiplied by 32 Inches 2 tenths, the Depth, gives 167116 Inches 8 tenths, which divided by 282, the Inches in an Ale Gallon, gives 59 Gallons 2 tenths.

To work this Problem another Way, by the *Gauging-Table*, being much easier, thus.

Seek the Diameter 25 Inches 7 tenths under *D.* and right against it, under *A. G.* for Ale Gallons, is 1 Gallon 84 of an hundred Parts of a Gallon, at an Inch deep; which multiplied by 32. 2 t. the Inches and tenths deep, gives 59.248; then cut off 3 Figures, for Fractions, and there will be towards the left Hand 59 Gallons and 248 of a Gallon, which is near a quarter of a Gallon, as before.

To work this Problem, by the *Sliding-Rule*, and *Gauging-Table*.

Having found out by the *Gauging-table* 1 Gallon 84 of an hundred Parts, as before; set 1 on the sliding-piece to 1 and near 8 tenths and a half on the fixt-piece, and right against 32. 2 t. on the sliding-piece, is 59 and a Quarter, as before.

Here note, that if it be under 1 Gallon at an Inch deep, it is found between the 1 at the Beginning of the Line and 1 in the Middle; but if it be above 1 Gallon, at an Inch deep, it is found between the Middle one and the End.

Example 2.

At 10 Inches 4 tenths Diameter, and 18 Inches deep, how many Ale Gallons?

Seek the 10. 4 *t.* under *D.* and right against it, under *A. G.* is 3 tenths, or 30 of an hundred parts of a Gallon, at an Inch deep; set 1 on the sliding-piece to the Figure 3, between the Beginning and the Middle 1, then right against 18, on the sliding-piece, is 5 Gallons and 4 tenths; but if you do it by the Pen, tis but multiplying 18 by 3, and it is 5 Inches 4 tenths, as before.

But if you would have Wine or Corn Gallons, seek the Gallons and hundred parts under it's proper Column, and work as in Ale Gallons, and the Answer will be Wine or Corn; according to which Column you take out the Gallons and hundred parts at an Inch deep.

Example.

The Diameter 36. 5 *t.* and depth 27. 3 *t.* seek 36. 5 *t.* under *D.* and right against it under *W. G.* is 4 Gallons, 52 of an hundred parts; 27. 3 *t.* the Depth gives 99.645 *bp.* which is 90 Gallons and a little above half a Gallon.

By the Sliding-Rule.

Set 1 to 36. 5 *t.* and right against 27. 3 *t.* is 99.6 *t.* as before.

Here take this for a general rule or Cannon, as it is to the Gallons and hundred parts at an Inch deep, so is the depth of the Vessel to the Content.

Problem 3.

To guage round Vessels that is taper'd, take the Diameter at bottom and top, and add them together, and

and take the half for the mean-Diameter ; then work as before is taught, or take the Diameter Just in the Middle, then work as before.

Problem 4.

To Gauge close Casks, whose staves are bending.

Take the Bungs Diameter, and then find in the Table the gallons and hundred parts at an Inch deep, as in the Table, in what gallons you would have the content, whether Ale, or Wine ; which Gallons and hundred parts, divide by 3 and the Quotient multiply by 2 which set down ; or set down the Quotient two times under each other, then measure the Head Diameter, and find in the Table the Number of Gallons and hundred parts, which divide by 3 and set down that Quotient once under the former, which three Sums add together for the Gallons and hundred parts, which multiply by the length of the Vessel gives the content.

Example

	<i>l. t.</i>
The bungs Diamter	32. 8
The Head Diameter	27. 8
The length	24. 3
The answer is to be Ale Gallons.	

Seek the Bungs diameter 32. 8 *l.* in the Table, and it gives 2. 98 which divide by 3 is 99 which sum set down twice the seek 27. 8 *l.* the .99
Head Diameter, and it gives 2. 14 *hp.* .99
which divided by 3 gives 71 which set .71
down once under the former ; then
add all three Sums together and they 2. 69
make 2. 69 for a *mean Area*, which
multiply by 24: 3 gives 64 Gallons 3 *t.*

Problem 3.

To Gauge close Casks, by the Gauge-Point and Mean Diameter.

The diameter of a Circle, whose *Area* is 282, at one Inch deep, is the *Gauge-point* for Ale gallons ; The diameter of a Circle at an Inch deep, whose *Area* is 231, is a Wine gallon *Gauge point* ; The diameter of a circle whose *Area* is 272, at an Inch deep, is the *Gauge-point* for Corn gallons ; seek in the Gauging Table for 231 under *Areas*, and in the first Collumn under *D.* is 17. 2 t. which is the *Gauge point* for Wine gallons ; seek in the Gauging Table for 272 under *Areas*, and in the first Collumn under *D.* is 18. 6 t. which is the *Gauge-point* for Corn gallons ; then seek in the Gauging Table for 282 under *Areas*, and under *D.* is near 19 which is the *Gauge-point* for Ale gallons.

These *Gauge-points* ought to be marked with a *Dot*, and right over them set *W. C.* and *A.* for the *Gauge-point* of each Measure ; thus having found the *Gauge-points*, and thus marked either on the 40 Scale for *Timber Measure*, or common *Sliding-Rules* ; or on the Single Line for *Square Roots*, on the double sliding rule, we Proceed to the Work it self: *First*, with a Line divided into Inches and tenths, take the diameter at the *Bung* within side of the Vessel, which set down, then take the diameter at the *Head*, and set that down, then with a pair of *Calipers* take the length of the Vessel in Inches and tenths ; out of which, take an Inch for the thickness of both *Heads*, and set the remainder down for the length within side ; the dimentions thus taken, set down as before.

Ex.

Example 1:**I. t.**

The Bungs Diameter	32. 2
The Heads Diameter	24. 6
The Length	28. 4

Then say on the *sliding rule*, as 10 on the sliding-piece ; is to 7 on the fixt-piece ; and right against 7. 6t. the difference of the Diameter on the Sliding-piece, is 5. 3 t. which added to the head Diameter 24. 6 t. is 29. 9 t. for the Mean Diameter.

Then set the *Gauge-Point* either for Ale, Wine, or Corn, to the length of the Vessel ; as here, for Ale, set the *Gauge-point A.* on the 40 Scale, or on the Single Line of Roots, to 28. 4t. on the double Line of Numbers, and right against 29. 9 t. the mean Diameter, is near 71 Gallons Ale measure ; but if it had been Wine, set *W.* to 28. 4 t. the length, and right against 29. 9 t. the Mean diameter, is 86 gallons and a half, or having found the Mean diameter 29. 9 t. in the *Gauging-Table*, seek that Diameter, and right against it under *A. G.* is 2. 49 *hp.* which Multiply'd by 28. 4 t. the length gives 70. 71 *hp.* as before.

To work this Problem, by the Line of Numbers, and the Dividers, having found the Bungs Diameter.

I. T.

The Head Diameter	32. 2
The Length	24. 6
The Difference of the Bung And Head Diameters	28. 4 7. 6

Extend the Compasses or dividers from 10 to 7, and that extent laid the same way from 7. 6 t. the difference of the diameters, will reach to 5. 3 t. which added to 24. 6 t. the diameter at head, makes 29.

29. 9 t. for a mean diameter ; then set one foot of the dividers in near 19 the *Gauge-Point* for Ale, and extend the other to 29. 9 t. the Mean diameter, that extent laid or turned twice, from 28. 4 t. the Length, the same way, shall reach to near 71 Gallons.

Problem 6.

To Gauge Square Cisterns, to find the Number of Corn Gallons.

First multiply the Length in Inches and tenths, by the Wedth in Inches and tenths, which Number find in the *Gauging-Table* under *Areas*, and right against that Number under *C. G.* is the Gallons and hundred-parts at an Inch deep ; which multiplied by the Inches and tenths deep, gives the Number of Gallons. when 3 Figures are cut off towards the Right-hand.

Example.

	I. T.
The Length of the Cistern	47. 8
The Wedth	37. 6
The Depth	39. 4
The length and wedth multiply'd together is	1797

Which seek in the *Gauging-Table* under *Areas*, and right against it under *C. G.* is 6 Gallons 59 of an hundred parts of a Gallon ; which multiply'd by 39. 4 t. the depth gives 259 Gallons and 646 parts, which Divided by 8 the Number of Gallons, in a Bushel, gives 32 Bushels 3 Gallons.

659

394

To

To work this Problem by the Sliding-Rule, thus;

Set 1 on the sliding-piece, to 47. 8 t. on the fixt-piece, and right against 37. 6 t. on the sliding-piece is a Number; to which set 272 on the sliding-piece, and right against 39. 4 t. on the fixt-piece, is a Number on the fixt-piece; to which set 8 on the sliding-piece, and right against 1 on the sliding-piece is 32 Bushels and 4 tenths, as before.

Problem 7.

To gauge large Vessels by the Pen, without the Gauging-Table; or such Vessels as runs beyond the Table. And first for a Brewers Cooler.

Example 1.

The Length	96. 2
Wedth	72. 4
The Depth	8. 7

First multiply	96. 2
By	72. 4
	————

It makes 6964. 88
which divided by 282, the square Inches in an Ale-Gallon, makes 24 Gallons 69 of an hundred Parts, at an Inch deep; which multiplied by 87 makes 248 Gallons and 3 tenths.

Problem 8.

To gauge a Round Cooler?

The Diameter 72 Inches,
The Depth 4 Inches.

First square the Diameter; that is, multiply 72 by 72, it makes 5184; which multiply by 11, and divide by 14, it makes 4073, which divided by 282,

282, makes 14 Gallons 44 tenths, which multiplied by 4 Inches the Depth, makes 57 Gallons 76 *Hp*.

To work this by the Sliding-Rule.

Set 1 on the sliding-piece, to 72 on the fixt-piece, and right against 72 on the sliding-piece, is a Number; to which set 1 on the sliding-piece, and right against 11 on the same piece, is another Number; to which set 14 on the sliding-piece, to which set 282 on the sliding-piece, and right against 4 Inches the Depth, on the sliding-piece, is 57 Gallons 76 hundred Parts, as before.

This is the Rule by which I made the Gauging-Table.

That is, square the Diameter, and multiply that Product by 11, and divide by 14, and that Quotient divided by 282, first adding 2 Cyphers, and the Quotient is Gallons, and hundred Parts.

Problem 9.

To measure an Oval Vessel.

First multiply the two Diameters together, that Product multiply by 11, divide then by 14, and that Quotient divide by 282, that Quotient multiplied by the Depth, gives the Content.

The longest Diameter

The shortest Diameter

Multiplied by 11, and divided by 14, and that Quotient divided by 282, gives 3 Gallons 04 hundred Parts, which multiply by the Depth 3. 4 makes 10 Gallons 33 hundred Parts.

Problem 10.

To find the Diameter, to make a Circle equal to an Oval,

The longest Diameter 42

The shortest Diameter 36

First multiply the 2 Diameters together, then extract 42

the square Root, thus ; 36

$$\begin{array}{r} 42 \\ 36 \\ \hline 252 \\ 126 \\ \hline \end{array}$$

To extract the Root, do thus ;

first make a Point over the first

Figure towards the right

Hand, then make a Point over

the third, and so miss every

other Figure ; then find the

greatest Square as far as the

first Point, as here 15, and the

greatest Square is 3 times 3, which is 9 ; then place

3 in the Quotient, and 9 the square under 15, which

substract from 15, there remains 6, to which bring

down the next square, that is 12, and place them on

the right Hand ; then double the 3 in the Quotient,

and that is 6, which place for a Divisor ; then ask

how many times 6 in 61 ? Which I find 8 times,

then placing 8 in the Quotient, and also between

the Divisor and Dividend, which Figures I multiply

by the last Figure 8 in the Quotient, which makes

544, which substracted from the Dividend 912 there

remains 68, and the Quotient is 38, for the Diam-

eter, which is equal to the aforesaid Oval.

$$\begin{array}{r} 1512(38 \\ 9 \\ \hline \end{array}$$

$$\begin{array}{r} 68)612 \\ 544 \\ \hline \end{array}$$

68

Thus much for Gauging Vessels ; next I shall shew how to gauge Malt in the Heap.

Problem 11.

First measure the Length of the Heap in Inches and tenths, and also the Width in Inches and tenths, which set down one under the other, and multiply them together, which Product divide by 272, by adding 2 Cyphers on the right Hand of the Figures, if your Numbers be only whole Inches ; but if you have tenths in both Length and Width, then the 2 Figures towards the right Hand are Fractions, and then there is nothing to be added : But if you have tenths in only one Number and not in the other, then add one Cypher on the right Hand, the Number thus divided, the Quotient will be Gallons and hundred Parts, at an Inch deep ; then take the Depth of the Heap in 4 or 5 or 6 Places, and set down each Depth under the other, and add them into one Sum, which divide by the Number of Places you take the Depth in, and the Quotient will give the *mean Depth* ; then multiply the Number of Gallons and hundred Parts, by the Inches and tenths, the *mean Depth*, and cut off 3 Figures towards the right Hand, and the Figures toward the left Hand will be Gallons, which divide by 8 will give Bushels.

Example.

The Length of the Heap

125 I. 7 t.

The Width

96 8

The Product is

12167.76

which divided by 272 gives 44 Gallons 73 hundred Parts.

Then

(67)

Then take the Depth in 5 Places, that is, at each Corner, and in the Middle, and they are

8. 3
7. 9
5. 8
9. 2
8. 0

39. 2

All which added together is 39. 2 t. which divided by 5, the Quotient is 7. 8 t. by which multiply 44. 73. and it makes 348 Gallons 89 hundred Parts, which divided by 8 gives 43. 6 t.

Here note, that if you take the Depth in 6 Places; you must divide by 6, or in 7 Places divide by 7, or 8 Places divide by 8; thus you may take the Depth in many Places, as you see Convenient.

Problem 12.

To find the Want of close Casks; and first by the Table of Segments, or by the Line of Segments, on the Double Sliding-Rule.

Having the Bung's Diameter, and Content of the Vessel, and Inches wet or dry given, to find how much is wanting, or how much Liquor is remaining in the Vessel?

Say, as the Bung's Diameter on the Number, is to 100, on the Segments, so is the Inches dry or wet, to a fourth Number; which note.

2dly, say, as 100 on the Segments is to the whole Content: so is the noted Number before found, to the Gallons wet or dry.

Example 1.

The Bung's Diameter
The Content in Ale Gallons
The Inches dry

32. 7 t.
72. 5
15
Set

Set 32. 7 t. the *Bung's Diameter* to 190 on the *Segments*, and right against 15 Inches dry on the *Numbers*, is 45. 6 t. on the *Segments*, which note.

Then set 100 on the *Segments* to 72. 5 t. the *Content* on the *Numbers*, and right against 45. 6 t. on the *Segments*, is 33 Gallons and a half, the dry Gallons; which substracted from 72. 5 t. leaves 39 Gallons wet.

Example 2.

The *Bung's Diameter*

32. 2 t.

The *Content* in Ale Gallons

71. 9

The *Inches* wet

8

say as 32. 2 t. the *Bung's Diameter* is to 100 on the *Segments*, so is 8 Inches on the *Numbers* to 13. 0 t. on the *Segments*, which note.

Then say, as 100 on the *Segments* is to 71 Gallons the *Content*, so is the noted Number 13. 0 t. on the *Segments*, to 10 Gallons and a half wet.

A Table of Segments, of Areas, of Cillenders.

V.	Seg.	V.	Seg.	V.	Seg.	V.	Seg.
1	17	26	2066	51	5127	76	8155
2	48	27	2178	52	5255	77	8263
3	87	28	2292	53	5382	78	8369
4	134	29	2407	54	5509	79	8473
4	187	30	2523	55	5636	80	8576
6	243	31	2646	56	5762	81	8697
7	308	32	2759	57	5888	82	8776
8	375	33	2878	58	6014	83	8873
9	446	34	2998	59	6140	84	8967
10	520	35	3119	60	6265	85	9059
11	598	36	3241	61	6389	86	9149
12	680	37	3360	62	6513	87	9286
13	763	38	3487	63	6636	88	9320
14	851	39	3611	64	6759	89	9409
15	944	40	3730	65	6881	90	9480
16	1033	41	3860	66	7002	91	9554
17	1127	42	3985	67	7122	92	9625
18	1224	43	4112	68	7241	93	9692
19	1323	44	4232	69	7360	94	9755
20	1424	45	4394	70	7477	95	9815
21	1527	46	4491	71	7593	96	9866
22	1631	47	4618	72	7708	97	9913
23	1737	48	4745	73	7822	98	9953
24	1845	49	4873	74	7934	99	9983
25	1955	50	5000	75	8045	100	10000

The

The Use of the Table of Segments.

First add to the wet or dry Inches two Cyphers on the right Hand, that Number divide by the Bung's Diameter, the Quotient find in the Table under *V.* and in the next Column, under *Seg.* is a Number, which multiplied by the Content of the Vessel, will give the wet or dry Gallons, when 4 Figures is cut off toward the right Hand.

Example.

The Bung's Diameter

24 I. 2

The Content 39 Wine Gallons 6 tenths, and 9 l. 4 r. dry ;

First add 2 Cyphers to 9. 4. and it makes 9.400, which divided by the Bung's Diameter, the Quotient is 38, which seek in the Table under *V.* and right against, it under *Seg.* is 3487 ; which multiplied by 39. 6 r. the Content, and cutting off 4 Figures towards the right Hand, gives 13 Gallons and 71 of an hundred Parts.

24.2(9.400(38

2140

Here note, that if there be a *Decimal Fraction* in the Content of the Vessel, then as many more Figures must be cut off besides the 4 first Figures, as there be Places in the *Decimal Fraction* ; that is, if the Content was given in Gallons and tenths, to be multiplied by the *Segments*, then cut off 5 Figures ; but if it were Gallons and hundred Parts, then cut off 6 Figures towards the right Hand, and the Figures towards the left Hand is Gallons ; that is wanting, or dry.

Problem 13.

To find how much is wanting, in a Close Cask ; standing on the Head.

First find the *Head* and *Bung Diameter*, and the half Length ; subtract the *Head-Diameter* from the *Bung*, the Remainder divide by the half Length of the Vessel, first adding 2 Cyphers to the Remainder, which Quotient *note*, then find how many Inches and tenths is *Dry*, if less than half out ; or if more than half out, find how many Inches and tenths *Wet* ; which multiplied by the Number before noted, by cutting off the Fractions, gives another Number, which added to the Double of the *Head-Diameter*, and taking the half Sum ; which half Sum find in the *Gauging-table*, under *D.* and in the respected Columns, either *Ale* or *Wine*, gives the Gallons and hundred Parts, which multiplied by the Inches *Wet* or *Dry*, gives the Gallons *Dry* or *Wet* in the Vessel.

Example.

The Bung's Diameter	28
The Head's Diameter	22
The Difference	6
The half Length	12
The Inches dry	9
The Difference divided by the half Length is	0.5 t.
which multiplied by the Inches dry	9
Gives	4.5
Which added to 44, the Double of the Head's Diameter is	48.5 t.
The half Sum is	24.2
Which gives in the Column of Ale Gallons	1.63
Which multiplied by the Inches dry	9
Gives 14 Gallons 67 of an hundred parts dry	14.67
But	

But if the Vessel had been above half out, work with the Inches *Wet*, as you did with the Inches *Dry*, and it will give how many Gallons remains; only remember to make an Allowance for the Grounds.

To work this Problem an easier Way, thus

Having the Dimentions as before, lay on the sliding-rule, as 12, the Half Length is to the Difference of the Diameter 6, so is 9, the Inches day to 4 Inches 5 tenths, which added to 44, the Double of the Heads Diameter, is 48. 5 t. the half Sum is 24. 2 t. which gives 1 Gallon 63 of an hundred Parts Ale, which multiplied by 9, the Inches wet gives 14 Gallons 67 hundred Parts.

C H A P. IV.

Problem 1.

The Use of the Table, in making Cooper's Vessels to any Size, or to contain any Number of Gallons: And first, to make Open Vessels.

I Would have a *Brewing-Fatt* made, to hold 42 Gallons Ale, the Depth 24 Inches: First divide the Number of Gallons by the Depth, the Quotient find in the *Gauging-table*, under Ale Gallons, and right against it, under *D.* is the Diameter of that Vessel.

Example.

Divide 42 by 24, the Quotient is 1 Gallon 75 hundred Parts, which seek in the Table, and right against it under *D.* is 25 Inches 1 tenth, for the Diameter.

Problem 2.

I would have a Vessel made, to hold 42 Wine Gallons; the Bung Diameter 28 Inches, the Head Diameter 22 Inches.

As 10 is to 7, so is 6 the Difference of the Diameters, to 4. 2 *t.* which added to 22, the Head Diameter is 26. 2 *t.* which seek in the *Gauging-table*, under *D.* and right against it, under *W. G.* is 2. 33. by which I divide 42, by adding 2 Cyphers, and the Quotient is 18 Inches, for the Length.

But if it had been 42 Ale Gallons, seek the *mean Diameter* 26 Inches 2 tenths, under *D.* and under *A. G.* is 1 *G.* 91 *Hp.* by which I divide 42, and the Quotient is 22 Inches 2 tenths, the Length of the Vessel.

Example 2

I would have a Vessel to hold 18 Gallons, the Bung Diameter 21 Inches 6 tenths, the Head 16 Inches 4 tenths.

Say by the *Sliding-Rule*, as 10 to 7, so is 5 Inches 2 tenths to 3 Inches 6 tenths, which added to 16. 4. is 20 Inches, for a *mean Diameter*; which seek in the *Gauging-table*, under *D.* and under *A. G.* in the *Angle of Meeting*, is 1 Gallon 11 hundred Parts, by which I divide 18 Gallons, and the Quotient is 16 Inches 3 tenths, for the Length.

Problem 3.

The Content of a Vessel, and the Length given; to find the Diameter?

First divide the *Content* by the *Length* of the Vessel and the *Quotient* seek in the *Gauging-table*, under either *A. G.* or *W. G.* and right against it is the *mean Diameter*, under *D.*

Example.

The Content 48 Ale Gallons, and the Length 24 Inches, what is the *mean Diameter*? Divide 48 by 24, and the Quotient is 2 Gallons, which seek in the *Gauging-table*, under *A. G* and right against it, under *D.* is 26 Inches 9 tenths, for the mean Diameter; then to proportion the Diameter, suppose the Bung Diameter 3, the Head Diameter 22; say as 10 is to 7, so is 8 their Difference, to 5. 6 *t.* which added to 22, makes 27 Inches 6 tenths, which is 7 tenths too much; then say, as the mean Diameter is to 30, the Bung Diameter, so is 7 to 7 tenths, the Half subtracted from 30, leaves 29 Inches 7 tenths for the Bung Diameter; then say, as 26. 9. the mean Diameter, is to 22 the Head Diameter, so is 7 to almost 6 tenths; the half Sum is 3 tenths, which taken from 22, leaves 21 Inches 7 tenths, the Diameter of the Head.

This Way is more Troublesome than having the Diameter to find the Length, therefore the former Way is most to be used; but for Vessels in the Form of a *Cillender*, you may as readily find the Diameter as the Length, which is both done by the *Gauging-table*.

Here note, that the same Rule will serve in making *Well-Buckets*, or *Round Wooden Bottles*, or *Half Anchors*, or any *Smaller Vessels*; as a little Practice will plainly shew.

The Use of the Gauging-Table, apply'd to Farmers use; to try what Measure they send to Town.

Problem 4.

First with a Rule divided into Inches and tenths, find the Diameter of the Bushel or half Bushel, which

which Diameter seek in the *Gauging-table* under D. and right against it, under C. G. you have the Gallons and hundred Parts, at one Inch deep; then measure the Depth in Inches and tenths, and multiply the Gallons and hundred Parts by the same, then cut off 3 Figures towards the right Hand, and the Figures towards the left Hand are Gallons, and the Figures towards the right Hand thousand Parts of a Gallon.

Example.

The Diameter 14 Inches 7 tenths, and 11 Inches 2 tenths deep:

Seek 14. 7. tenths in the *Gauging-table*, and right against it, under C. G. is 62, which multiplied by 11. 2 t. deep, the Product is 7 Gallons 56 hundred Parts, which wants almost half a Gallon.

To work this by the Sliding-Rule.

Set 1 to 62, and right against 11. 2. is 7 Gallons and a half and a little more, as before.

Example 2.

The Diameter 15. 2 t. and 13. 1 t. deep; seek 15. 2 t. in the Table, and right against it, under *Corn Gallons*, is 67, which multiplied by 13. 1 t. is 8.777, then cut off 3 Figures and it is 8 Gallons and 3 Quarters.

To work this by the Sliding-Rule.

Set 1 to .67, and right against 13. 1 is 8 Gallons and 3 Quarters as before.

Example 3.

The Diameter 15 Inches, and 12 Inches 2 tenths deep: Seek the Diameter in the *Gauging-table*, and right against it, under C. G. is 6. 5, which multiplied by 12. 2, is near 8 Gallons.

The Use of the Gauging-Table, shewing Bucket-makers how to make Bushels, Half Bushels, or Buckets to hold any Number of Gallons.

Problem 5.

I would have a Bushel made to hold just 8 Gallons: First find the Wedth of the Piece, allowing for the Bottom, which is the Depth; which suppose 10 Inches 7 tenths, by which I divide 8 Gallons, by adding 3 Cyphers, and the Quotient is 74, which seek in the *Gauging-table*, under C. G. and under D. right against it, is 15 Inches 9 tenths, the Diameter: So that 15. 9 t. Diameter, and 10 Inches 7 tenths deep, will hold just 8 Gallons.

But, if the Bushel be ready made, as suppose 14. 2 t. Diameter, how deep must it be to hold 8 Gallons.

Seek 14 Inches 2 tenths in the Table, and right against it is 57, by which divide 8 Gallons, by adding 3 Cyphers, and the Quotient is 14 Inches, for the Depth.

Example.

To make a Bucket to hold 4 Gallons Ale Measure, the Depth or Wedth of the Piece 8 Inches, what is the Diameter? First divide 4 Gallons by 8 the depth, and the Quotient is 50 of a hundred Parts, which seek in the *Gauging-table*, and under D. is 13. 4 t. the

the *Diameter* : This is a good Size for a Half Bushel : If you seek 50 under *C. G.* the *Diameter* is 13 Inches 2 tenths ; so that a *Bucket* 13 Inches 4 tenths *Diameter*, and 8 Inches deep, holds 4 Gallons Ale Measure, but 13. 2 t. and 8 Inches deep, holds 4 Gallons Corn-Measure.

Example 2.

I would have a *Bucket* to hold 2 Gallons Ale Measure, the depth 6 Inches and 4 tenths : Divide 2 Inches by adding Cyphers as before, by 6 Inches 4 tenths, and the Quotient is 31, which seek in the Table, under *A. G.* and right against it is 10 Inches 6 tenths, the *Diameter*.

These are all the Rules that are necessary in *Gauging, and making all Manner of Vessels*, both *Close* or *Open* : As for *square Vessels*, the Rule is to multiply the Length by the Width, that Product divide by the Number of *square Inches*, either in *Ale, Wine*, or *Corn Gallons*, and the Quotient will be Gallons and hundred Parts ; by which divide the Content of the Vessel, and the Quotient will be Inches deep : I shall conclude this Chapter with two *Problems* more.

Problem 6.

To find the Content of any irregular Body by Water.

Having a Vessel of a regular Form, as a *Square, Long Square, or Round and Cillender Form* : First fill the Vessel full of Water, then put the *irregular Body* into it, and the Water will run over the Vessel ; but you must set the Vessel level ; then take the *irregular Body* out of the Water, and let it drop as clean as can be into the Water, which done, find how much Water is wanting in the Vessel, and the Number of *square Inches* the Vessel wants of being full, is the

Con-

Content of the Body : This is the only Rule to find the Content of any *irregular Body* whatsoever.

Problem 7.

Shewing how to Gauge Drinking-Mugs, at the Ale-House.

Suppose I go to a Publick House or Victualling-House, where they sell *Ale*, and call for a *Mug*, and when they have brought it I think it not Measure, according to the standing *Winchester-Measure* ; therefore I measure the Diameter in Inches and tenths, which I seek in the *Gauging-table*, and under *Areas*, it gives me the square Inches and hundred Parts at one Inch deep ; then I measure the Depth in Inches and tenths, by which I multiply the *Area* at one Inch deep, and it gives the Content in Inches and thousand Parts of an Inch, which I seek in the Table at the End of the *Gauging-table* to convert *square Inches* into Pints, and take out the next lesser Number to it, as for 1 Pint, 35 Inches, and for 2 Pints or a Quart, 70 Inches, and substract that from the square Inches before found, and it will shew how much the Mug is too little, or too big : *Where note*, that if the pint Mug contains above 35 square Inches and $\frac{1}{2}$, it is too big, but if less it is too little ; and if the Quart contains 70 Inches and $\frac{1}{2}$ it is true Measure, but if not, it is either too little, or too big : *Where note*, that the Rule to make Pots true Measure, is to divide 35 for a Pint, or 70 for a Quart, by the depth of the Mug, and the Quotient find in the *Gauging-table* under *Areas*, and under *D.* is the true *Diameter*.

Suppose the Diameter is 27 tenths, the Depth 8 Inches, what is the Content ?

Set

Set 1 on the sliding-rule to 6, and right against the *Areas* in the *Gauging-table*, for 2 Inches 7 tenths, which is 5. 72, is near 35 Inches; so that a Mug 2 Inches 7 tenths Diameter, and 6 Inches deep is one Pint.

Thus much for Gauging:

To find out the true Number of Square Inches there is in a Grind-stone, in every Inch grinding down, by the *Gauging-table*.

Suppose a Grindstone be 5 Inches thick, and 40 Inches Diameter: First seek 40 Inches in the *Gauging-table*, and right against it, in the next Column, is the *Area*, which set down; then in grinding down one Inch, makes 2 Inches less in *Diameter*, which taken from 40 leaves 38, which seek in the *Gauging-table*, and in the next Column, is the *Area* of that *Diameter*, which set down under the former, and substract it from the first, the Remainder multiply'd by 5, the Inches thick, will give the Number of Square Inches in grinding down 1 Inch toward the Center.

Example.

	I.	Hp.
The <i>Area</i> at 40 Inches is	1257.	15
The <i>Area</i> at 38 Inches is	1134.	57
The Remainer is	122.	58
Which multiply by		5
So the grinding down one Inch is	612.	90

Then

(80)

Then seek 36 Inches Diameter
and the Area is 1018. 28
which substract from 1134. 57

The Remainder is
Which multiply by

So grinding down the second Inch is

And thus by subſtraſſing every 2 Inches *Area* from the former, will ſhew the true Number of ſquare Inches, in every Inch grinding down.



A New Revolution Table.

Date.	P.	Ep.	D. L.	Date.	P.	Ep.	D. L.
1721	12	12	a	1751	4	14	f
1722	13	23	g	1752	5	25	ed
1723	14	4	f	1753	6	6	c
1724	15	15	ed	1754	7	17	b
1725	16	26	c	1755	8	28	a
1726	17	7	b	1756	9	9	gf
1727	18	18	a	1757	10	20	e
1728	19	29	gf	1758	11	1	d
1729	1	11	e	1759	12	12	c
1730	2	22	d	1760	13	23	ba
1731	3	3	c	1761	13	23	g
1732	4	14	ba	1762	14	4	f
1733	5	25	g	1763	15	15	e
1734	6	6	f	1764	16	26	dc
1735	7	17	e	1765	17	7	b
1736	8	28	dc	1766	18	18	a
1737	9	9	b	1767	19	29	g
1738	10	20	a	1768	1	11	fe
1739	11	1	g	1769	2	22	d
1740	12	12	fe	1770	3	3	c
1741	13	23	d	1771	4	14	b
1742	14	4	c	1772	5	25	ag
1743	15	15	b	1773	6	6	f
1744	16	26	ag	1774	7	17	e
1745	17	7	f	1775	8	28	d
1746	18	18	e	1776	9	9	cb
1747	19	29	d	1777	10	20	a
1748	1	11	cb	1778	11	1	g
1749	2	22	a	1779	12	12	f
1750	3	3	g	1780	13	23	ed
			L				A

A New Revolution Table.

Date.	P.	Ep.	D. L.	Date.	P.	Ep.	D. L.
1781	14	4	c	1811	6	6	a
1782	15	15	b	1812	7	17	gf
1783	16	26	a	1813	8	28	e
1784	17	7	gf	1814	9	9	d
1785	18	18	e	1815	10	20	c
1786	19	29	d	1816	11	1	ba
1787	1	11	c	1817	12	12	g
1788	2	22	ba	1818	13	23	f
1789	3	3	g	1819	14	4	e
1790	4	14	f	1820	15	15	dc
1791	5	25	e	1821	16	26	b
1792	6	6	dc	1822	17	7	a
1793	7	17	b	1823	18	18	g
1794	8	28	a	1824	19	29	fe
1795	9	9	g	1825	1	11	d
1796	10	20	fe	1827	2	22	c
1797	11	1	d	1827	3	3	b
1798	12	12	c	1828	4	14	ag
1799	13	23	b	1829	5	25	f
1800	14	4	ag	1830	6	6	e
1801	15	15	f	1831	7	17	d
1802	16	26	e	1832	8	28	cb
1803	17	7	d	1833	9	9	a
1804	18	18	cb	1834	10	20	g
1805	19	29	a	1835	11	1	f
1806	1	11	g	1836	12	12	ed
1807	2	22	f	1837	13	23	c
1808	3	3	ed	1838	14	4	b
1809	4	14	c	1839	15	15	a
1810	5	25	b	1840	16	26	gf

A Table to find Easter.

Prim	A.	B.	C.	D.	E.	F.	G.
1	April 9	10	11	12	6	7	8
2	Mar. 26	27	28	29	30	31	April 1
3	April 16	17	18	19	20	14	15
4	April 9	3	4	5	6	7	8
5	Mar. 26	27	28	29	23	24	25
6	April 16	17	11	12	13	14	15
7	April 2	3	4	5	6	Mar. 31	April 1
8	April 23	24	25	19	20	21	22
9	April 9	10	11	12	13	14	8
10	April 2	3	Mar. 28	29	30	31	April 1
11	April 16	17	18	19	20	21	22
12	April 9	10	11	5	6	7	8
13	Mar. 26	27	28	29	30	31	25
14	April 16	17	18	19	13	14	15
15	April 2	3	4	5	6	7	8
16	Mar. 26	27	28	22	23	24	25
17	April 16	10	11	12	13	14	15
18	April 2	3	4	5	Mar. 30	31	April 1
19	April 23	24	18	19	20	21	22

*An Explanation of a new ASTRONOMICAL
Revolution Instrument.*

Shewing, by turning of one Circle over another and a Thread, The Date of the Lord, Golden Number, Epact, Dominical Letter, Leap-Year, the Day of the Month, Fix'd Feasts, Moveable Feasts, Age of the Moon, Change, Quarters, and Full; the Sun's Place in the Ecliptick, Right Ascension, the Moon's Place, and Right Ascension, the South-ing of the Fix'd Stars; by which you may find the Hour of the Night, and many other Things; it being an Universal Instrument, for Sea and Land Uses. With a Calculation of Dates, Primes, Epacts, and Dominical Letter, from 1721, it being the next after Leap-Year, to 1840; with Rules for New Calculations, to the End of the World, and is as followeth

First, the Outmost Circle is graduated with the Months and Days, with their proper Letters to each Day, and Fix'd Feasts; on the next Circle is graduated the Moon's Age every Day in the Year, with the Moveable Feasts and Sundays throughout the Year. The next Circle is graduated with a Line of Right Ascension and Ecliptick Line: The next Circle is graduated with 29 Days and a half, the Moon's Age and Right Ascension in Hours: These Circles are placed on a Pin to turn round, and set to each other at pleasure. This Instrument may be made either with Silver, Brass, Wood, or Pasteboard, to any Radius or Size.

*The Use of the Instrument.**Problem 1.*

To find the Prime, Epact, and Dominical Letter for any Year.

Seek in the Table of Dates for the Year, and in the three next Columns is the *Golden-Number*, or *Prime*; and in the next the *Epact*, and in the third the *Sunday-Letter*, for that Year: If it be a double Letter, it is *Leap-Year*, otherwise the first, second, or third after.

Example

What is the *Golden-Number*, *Epact*, and *Dominical Letter*, for the Year 1735? Find the *Date*, and in the respective Columns is 7 for the *Golden-Number*, 17 for the *Epact*, and *e* the *Dominical Letter*, being the Third after *Leap-Year*.

Example 2.

The Year 1749 hath 2 for the *Golden Number*, 22 *Epact*, and *a* the *Dominical Letter*, being the first after *Leap-Year*.

Problem 2.

To find what Day Easter falls on any Year.

First seek the *Date*, and then the *Prime* and *Dominical Letter*; then enter the Table to find *Easter*, with the *Prime* in the first Column, and the *Dominical Letter* on the Top, and in the *Angle of Meeting*, is the *Month* and *Day* that *Easter* falls on that Year.

Ex-

Example.

1728, the *Prime* is 19, and *gf* for the *Dominical Letter*; then I enter the Table to find *Easter* with 19 under *Prime*, and I find it at the lower End; then I find *f*, the Latter of the two Letters on the Top, and in the *Angle of Meeting*, is 21, then tracing my Eye towards the *Prime*, I find *April*, which shews it will be *April 21* that Year: Here note, that *g* is the *Sunday Letter* till the 29 of *March* that Year, and *f* is the *Sunday Letter* all the Year after.

Problem 3.

To find the Age of the Moon, at any time.

I demand the Moons Age *August 1. 1729*, first find the *Epact* by Problem 3, which is 11; then set 11 in the Circle of the Moons Age, to the first of *January*, then is the Circle fixed to find the Moons Age every day in that Year; then lay the thread over *August 1*, and it Cuts the Line of her Age 17 Days.

Example 2.

I would know the Moons Age *March 25, 1734*; the *Epact* by the first Problem is 6, then set 6 in the Moons Age, to the first of *January*, then lay the thread to the 25 of *March*, and it cuts the Circle of the Moons Age 11 Days.

Problem 4.

To find any Moveable Feast, for any Year.

First by the Second Problem find what Day *Easter Day* falls on, then lay the thread to that day, and bring *Easter Day* in the Table of *Moveable Feasts* under

under the thread ; then lay the thread to any *Moveable Feast*, and it Cuts the day of the Month, in the Callender of Months.

Example

I would know what day of the Month *Whitsunday* is 1742 ; first by the *Second Problem* find what day *Easter Day* is, and I find it *April 18*, to which lay the thread, then bring *Easter Day* under the thread ; the Circle thus set, lay the thread to *Whitsunday* and it Cuts the Callender of Months *June 6* ; thus laying the thread to any *Feast* will shew what day, Except *Advent*, which is always the nearest *Sunday* to the *Feast St. Andrew* ; whether before or after.

Problem 5.

To find the *Suns Place* and *Right Affension*, lay the string on the first point of *Aries* or 360 Degrees, and bring that Point to *March 9*, or rather midway between the 9 and 10 day, the Circle being thus Set, lay the thread to any day of the Year, and it cuts the *Suns Place*, and *Right Affension*.

Example

April 5, the *Suns right Affension* is 26, and his place in the *Ecliptick* 28 degrees in *Aries*.

Example 2.

Sept. 20 the *Suns right Affension* is 188 degrees, and his *Place* 8 degrees in *Libra*, or the ballance.

Problem 6.

To find the *Moons Place* and *right Affension*, for any time.

First find the *Epact*, and her *Age*, by Problem 3; then bring the 1 day in the inner Circle of her *Age*, to the Last change in the Circle of her *Age*, in the Circle of *Moveable Feasts*, the Circle being set to the *Epact* for the Year, the first Point of *Aries* to the 9 of *March*, then lay the thread to her *Age*, the inner Circle, and it cuts the Line of her *Right Affension* and Place.

Example.
If I would know the *Moons* place and *Right Affension* the 15 Day of *April*; 1734; the *Epact* for that year is 6, the *Moons Age* is 22 days and a half; the Circles set as before, lay the thread to 22 days and a half in the inner Circle of her *Age*, and it cuts her Place 21 Degrees in *Pisces*, and 351 Degrees her *Right Affension*.

Problem 7.
To find the Sign of the MOON in the body of Man, or beast.

First by the 6 Problem, find her Place then in this Table following it shews the Sign.

<i>Aries,</i>	Head and Face.
<i>Taurus,</i>	Neck and Throat.
<i>Gemminy,</i>	Arms and Shoulders.
<i>Cancer,</i>	Breast and Stomach.
<i>Leo,</i>	Heart and Back.
<i>Virgo,</i>	Bowels and Belly.
<i>Libra,</i>	Reins and Loines.
<i>Scorpio,</i>	Secrets and Hips.
<i>Sagitaris,</i>	Thighs.
<i>Capricorn,</i>	Knees.
<i>Aquarius,</i>	Leggs.
<i>Pisces,</i>	Feet.

(130)

So by the last *Problem* the *Moons Place* was 21 Degrees in *Pisces*; so the Sign is in the Feet; and so of any other.

Problem 8.

To find the Southing of the fixed Stars.

First find the *Sun's Right Affension* which set down, then in a Table of the *Right Affension* of the *fixed Stars*, find the *Star's Right Affension*; Substraſt the *Right Affension* of the *Star*, from the *Right Affension* of the *Sun*, and the Remainer Divide by 15, the Quotient is hours after Noon; but if the *Star's Right Affension* be greater than the *Sun's*, then add 360 Degrees to the *Sun's Right Affension*, and then from it Substraſt the *Right Affension* of the *Star*, the Remainer divided by 15, shews the hours after-*Noon*.

Example.

I would know the time of the 7 Stars coming to the South December 10, the *Right Affension* of the 7 Stars, is 51 degrees, the *Right Affension* of the *Sun December 10* is

	270
From which I Substraſt	51

The Remainer is

219

H. M.

Which Divide by 15, gives

14. 36

From which Substraſt 12 there Remains 2 h. 36 m. which is 36 Minutes after 2 in the Morning.

The Right Affension of the 12 Fixed Stars.**D. M.**

1 Pole Star,	9. 0
7 Stars,	52. 22
Bulls Eye,	65. 0
Orion's Left Foot,	75. 30
Orion's Left Shoulder,	85. 0
Great Dog,	109. 50
Little Dog,	111. 25
Lyon's Heart,	148. 30
Virgin's Spine,	198. 0
<i>Alturius</i>	211. 0
Scorpion's Heart,	243. 32
The shining Harp.	277. 17

Thus much for the use of the Instrument.

Numb.

The Price of any thing, being 1 Farthing.

n th	V.			N.	V.			N.	V.					
	l.	s.	d.	q.										
1	0	0	0	1	41	0	0	10	1	81	0	1	8	1
2	0	0	0	2	42	0	0	10	2	82	0	1	8	2
3	0	0	0	3	43	0	0	10	3	83	0	1	8	3
4	0	0	1	0	44	0	0	11	0	84	0	1	9	0
5	0	0	1	1	45	0	0	11	1	85	0	1	9	1
6	0	0	1	2	46	0	0	11	2	86	0	1	9	2
7	0	0	1	3	47	0	0	11	3	87	0	1	9	3
8	0	0	2	0	48	0	1	0	0	88	0	1	10	0
9	0	0	2	1	49	0	1	0	1	89	0	1	10	1
10	0	0	2	2	50	0	1	0	2	90	0	1	10	2
11	0	0	2	3	51	0	1	0	3	91	0	1	10	3
12	0	0	3	0	52	0	1	1	0	92	0	1	11	0
13	0	0	3	1	53	0	1	1	1	93	0	1	11	1
14	0	0	3	2	54	0	1	1	2	94	0	1	11	2
15	0	0	3	3	55	0	1	1	3	95	0	1	11	3
16	0	0	4	0	56	0	1	2	0	96	0	2	0	0
17	0	0	4	1	57	0	1	2	1	97	0	2	0	1
18	0	0	4	2	58	0	1	2	2	98	0	2	0	2
19	0	0	4	3	59	0	1	2	3	99	0	2	0	3
20	0	0	5	0	60	0	1	3	0	100	0	2	1	0
21	0	0	5	1	61	0	1	3	1	200	0	4	2	0
22	0	0	5	2	62	0	1	3	2	300	0	6	3	0
23	0	0	5	3	63	0	1	3	3	400	0	8	4	0
24	0	0	6	0	64	0	1	4	0	500	0	10	5	0
25	0	0	6	1	65	0	1	4	1	600	0	12	6	0
26	0	0	6	2	66	0	1	4	2	700	0	14	7	0
27	0	0	6	3	67	0	1	4	3	800	0	16	8	0
28	0	0	7	0	68	0	1	5	0	900	0	18	9	0
29	0	0	7	1	69	0	1	5	1	1000	1	0	10	0
30	0	0	7	2	70	0	1	5	2					
31	0	0	7	3	71	0	1	5	3	2000	2	1	8	0
32	0	0	8	0	72	0	1	6	0	3000	3	2	6	0
33	0	0	8	1	73	0	1	6	1	4000	4	3	4	0
34	0	0	8	2	74	0	1	6	2	5000	5	4	2	0
35	0	0	8	3	75	0	1	6	3	6000	6	5	0	0
36	0	0	9	0	76	0	1	7	0	7000	7	5	10	0
37	0	0	9	1	77	0	1	7	1	8000	8	6	8	0
38	0	0	9	2	78	0	1	7	2	9000	9	7	6	0
39	0	0	9	3	79	0	1	7	3	10000	10	8	4	0
40	0	0	10	0	80	0	1	8	0	20000	20	16	8	0

The Price of any thing, being 2 Farthings.

Numb.	V.		N.	V.		N.	V.	
	<i>l.</i>	<i>s.</i>	<i>d.</i>					
1				41	0 1 8 2	81	0 3 4 2	
2	0 0	1 0		42	0 1 9 0	82	0 3 5 0	
3	0 0	1 2		43	0 1 9 2	83	0 3 5 2	
4	0 0	2 0		44	0 1 10 0	84	0 3 6 0	
5	0 0	2 2		45	0 1 10 2	85	0 3 6 2	
6	0 0	3 0		46	0 1 11 0	86	0 3 7 0	
7	0 0	3 2		47	0 1 11 2	87	0 3 7 2	
8	0 0	4 0		48	0 2 0 0	88	0 3 8 0	
9	0 0	4 2		49	0 2 0 2	89	0 3 8 2	
10	0 0	5 0		50	0 2 1 0	90	0 3 9 0	
11	0 0	5 2		51	0 2 1 2	91	0 3 9 2	
12	0 0	6 0		52	0 2 2 0	92	0 3 10 0	
13	0 0	6 2		53	0 2 2 2	93	0 3 10 2	
14	0 0	7 0		54	0 2 3 0	94	0 3 11 0	
15	0 0	7 2		55	0 2 3 2	95	0 3 11 2	
16	0 0	8 0		56	0 2 4 0	96	0 4 0 0	
17	0 0	8 2		57	0 2 4 2	97	0 4 0 2	
18	0 0	9 0		58	0 2 5 0	98	0 4 1 0	
19	0 0	9 2		59	0 2 5 2	99	0 4 1 2	
20	0 0	10 0		60	0 2 6 0	100	0 4 2 0	
21	0 0	10 2		61	0 2 6 2	200	0 8 4 0	
22	0 0	11 0		62	0 2 7 0	300	0 12 6 0	
23	0 0	11 2		63	0 2 7 2	400	0 16 8 0	
24	0 1	0 0		64	0 2 8 0	500	1 0 10 0	
25	0 1	0 2		65	0 2 8 2	600	1 5 0 0	
26	0 1	1 0		66	0 2 9 0	700	1 9 2 0	
27	0 1	1 2		67	0 2 9 2	800	1 13 4 0	
28	0 1	2 0		68	0 2 10 0	900	1 17 6 0	
29	0 1	2 2		69	0 2 10 2	1000	2 1 8 0	
30	0 1	3 0		70	0 2 11 0			
31	0 1	3 2		71	0 2 11 2	2000	4 3 4 0	
32	0 1	4 0		72	0 3 0 0	3000	6 5 0 0	
33	0 1	4 2		73	0 3 0 2	4000	8 6 8 0	
34	0 1	5 0		74	0 3 1 0	5000	10 8 4 0	
35	0 1	5 2		75	0 3 1 2	6000	12 10 0 0	
36	0 1	6 0		76	0 3 2 0	7000	14 11 8 0	
37	0 1	6 2		77	0 3 2 2	8000	16 13 4 0	
38	0 1	7 0		78	0 3 3 0	9000	18 15 0 0	
39	0 1	7 2		79	0 3 3 2	10000	20 16 8 0	
40	0 1	8 0		80	0 3 4 0	20000	41 13 4 0	

The

The Price of any thing, being 1 Penny.

Numb.	V.			N.			V.			N.			V.		
	L.	s.	d.												
1				41	0	3	5			81	0	6	9		
2	0	0	2	42	0	3	6			82	0	6	10		
3	0	0	3	43	0	3	7			83	0	6	11		
4	0	0	4	44	0	3	8			84	0	7	0		
5	0	0	5	45	0	3	9			85	0	7	1		
6	0	0	6	46	0	3	10			86	0	7	2		
7	0	0	7	47	0	3	11			87	0	7	3		
8	0	0	8	48	0	4	0			88	0	7	4		
9	0	0	9	49	0	4	1			89	0	7	5		
10	0	0	10	50	0	4	2			90	0	7	6		
11	0	0	11	51	0	4	3			91	0	7	7		
12	0	1	0	52	0	4	4			92	0	7	8		
13	0	1	1	53	0	4	5			93	0	7	9		
14	0	1	2	54	0	4	6			94	0	7	10		
15	0	1	3	55	0	4	7			95	0	7	11		
16	0	1	4	56	0	4	8			96	0	8	0		
17	0	1	5	57	0	4	9			97	0	8	1		
18	0	1	6	58	0	4	10			98	0	8	2		
19	0	1	7	59	0	4	11			99	0	8	3		
20	0	1	8	60	0	5	0			100	0	8	4		
21	0	1	9	61	0	5	1			200	0	16	8		
22	0	1	10	62	0	5	2			300	1	5	0		
23	0	1	11	63	0	5	3			400	1	13	4		
24	0	2	0	64	0	5	4			500	2	1	8		
25	0	2	1	65	0	5	5			600	2	10	0		
26	0	2	2	66	0	5	6			700	2	18	4		
27	0	2	3	67	0	5	7			800	3	6	8		
28	0	2	4	68	0	5	8			900	3	15	0		
29	0	2	5	69	0	5	9			1000	4	3	4		
30	0	2	6	70	0	5	10								
31	0	2	7	71	0	5	11			2000	8	6	8		
32	0	2	8	72	0	6	0			3000	12	10	0		
33	0	2	9	73	0	6	1			4000	16	13	4		
34	0	2	10	74	0	6	2			5000	20	16	8		
35	0	2	11	75	0	6	3			6000	25	0	0		
36	0	3	0	76	0	6	4			7000	29	3	4		
37	0	3	1	77	0	6	5			8000	33	0	8		
38	0	3	2	78	0	6	6			9000	37	10	0		
39	0	3	3	79	0	6	7			10000	41	13	4		
40	0	3	4	80	0	6	8			20000	83	6	8		

The

Numb.	The Price of any thing, being 3 Farthings.														
	V.			N.	V.			N.	V.						
	l.	s.	d.												
				41	0	2	6	3		81	0	5	0	3	
2	0	0	1	2	42	0	2	7	2	82	0	5	1	2	
3	0	0	2	1	43	0	2	8	1	83	0	5	2	1	
4	0	0	3	0	44	0	2	9	0	84	0	5	3	0	
5	0	0	3	3	45	0	2	9	3	85	0	5	3	3	
6	0	0	4	2	46	0	2	10	2	86	0	5	4	2	
7	0	0	5	1	47	0	2	11	1	87	0	5	5	1	
8	0	0	6	0	48	0	3	0	0	88	0	5	6	0	
9	0	0	6	3	49	0	3	0	3	89	0	5	6	3	
10	0	0	7	2	50	0	3	1	2	90	0	5	7	2	
11	0	0	8	1	51	0	3	2	1	91	0	5	8	1	
12	0	0	9	0	52	0	3	3	0	92	0	5	9	0	
13	0	0	9	3	53	0	3	3	3	93	0	5	9	3	
14	0	0	10	2	54	0	3	4	2	94	0	5	10	2	
15	0	0	11	1	55	0	3	5	1	95	0	5	11	1	
16	0	1	0	0	56	0	3	6	0	96	0	6	0	0	
17	0	1	0	3	57	0	3	6	3	97	0	6	0	3	
18	0	1	1	2	58	0	3	7	2	98	0	6	1	2	
19	0	1	2	1	59	0	3	8	1	99	0	6	2	1	
20	0	1	3	0	60	0	3	9	0	100	0	6	3	0	
21	0	1	3	3	61	0	3	9	3	200	0	12	6	0	
22	0	1	4	2	62	0	3	10	2	300	0	18	9	0	
23	0	1	5	1	63	0	3	11	1	400	1	5	0	0	
24	0	1	6	0	64	0	4	0	0	500	1	11	3	0	
25	0	1	6	3	65	0	4	0	3	600	1	17	6	0	
26	0	1	7	2	66	0	4	1	2	700	2	3	9	0	
27	0	1	8	1	67	0	4	2	1	800	2	10	0	0	
28	0	1	9	0	68	0	4	3	0	900	2	16	3	0	
29	0	1	9	3	69	0	4	3	3	1000	3	2	6	0	
30	0	1	10	2	70	0	4	4	2						
31	0	1	11	1	71	0	4	5	1	2000	6	5	0	0	
32	0	2	0	0	72	0	4	6	0	3000	9	7	6	0	
33	0	2	0	3	73	0	4	6	3	4000	12	10	0	0	
34	0	2	1	2	74	0	4	7	2	5000	15	12	6	0	
35	0	2	2	1	75	0	4	8	1	6000	18	15	0	0	
36	0	2	3	0	76	0	4	9	0	7000	21	17	6	0	
37	0	2	3	3	77	0	4	9	3	8000	25	0	0	0	
38	0	2	4	2	78	0	4	10	2	9000	28	2	6	0	
39	0	2	5	1	79	0	4	11	1	10000	31	5	0	0	
40	0	2	6	0	80	0	5	0	0	20000	62	10	0	0	

The Price of any thing, being 2 Pence.

Numb.	V.			N.			V.		
	<i>l.</i>	<i>s.</i>	<i>d.</i>						
2	0	0	4	41	0	6	10	81	0 13 6
3	0	0	6	42	0	7	0	82	0 13 8
4	0	0	8	43	0	7	2	83	0 13 10
5	0	0	10	44	0	7	4	84	0 14 0
6	0	1	0	45	0	7	6	85	0 14 2
7	0	1	2	46	0	7	8	86	0 14 4
8	0	1	4	47	0	7	10	87	0 14 6
9	0	1	6	48	0	8	0	88	0 14 8
10	0	1	8	49	0	8	2	89	0 14 10
				50	0	8	4	90	0 15 0
11	0	1	10	51	0	8	6	91	0 15 2
12	0	2	0	52	0	8	8	92	0 15 4
13	0	2	2	53	0	8	10	93	0 15 6
14	0	2	4	54	0	9	0	94	0 15 8
15	0	2	6	55	0	9	2	95	0 15 10
16	0	2	8	56	0	9	4	96	0 16 0
17	0	2	10	57	0	9	6	97	0 16 2
18	0	3	0	58	0	9	8	98	0 16 4
19	0	3	2	59	0	9	10	99	0 16 6
20	0	3	4	60	0	10	0	100	0 16 8
21	0	3	6	61	0	10	2	200	1 13 4
22	0	3	8	62	0	10	4	300	2 10 0
23	0	3	10	63	0	10	6	400	3 6 8
24	0	4	0	64	0	10	8	500	4 3 4
25	0	4	2	65	0	10	10	600	5 0 0
26	0	4	4	66	0	11	0	700	5 16 8
27	0	4	6	67	0	11	2	800	6 13 4
28	0	4	8	68	0	11	4	900	7 10 0
29	0	4	10	69	0	11	6	1000	8 6 8
30	0	5	0	70	0	11	8		
31	0	5	2	71	0	11	10	2000	16 13 4
32	0	5	4	72	0	12	0	3000	25 0 0
33	0	5	6	73	0	12	2	4000	33 6 8
34	0	5	8	74	0	12	4	5000	41 13 4
35	0	5	10	75	0	12	6	6000	50 0 0
36	0	6	0	76	0	12	8	7000	58 6 8
37	0	6	2	77	0	12	10	8000	66 13 4
38	0	6	4	78	0	13	0	9000	75 0 0
39	0	6	6	79	0	13	2	10000	83 6 8
40	0	6	8	80	0	14	4	20000	166 13 4

The

Numb.	The Price of any thing, being 3 Pence.											
	V.			N.			V.			N.		
	l.	s.	d.									
2	0	0	6	41	0	10	3	81	1	0	3	
3	0	0	9	42	0	10	6	82	1	0	6	
4	0	1	0	43	0	10	9	83	1	0	9	
5	0	1	3	44	0	11	0	84	1	1	0	
6	0	1	6	45	0	11	3	85	1	1	3	
7	0	1	9	46	0	11	6	86	1	1	6	
8	0	2	0	47	0	11	9	87	1	1	9	
9	0	2	3	48	0	12	0	88	1	2	0	
10	0	2	6	49	0	12	3	89	1	2	3	
				50	0	12	6	90	1	2	6	
11	0	2	9	51	0	12	9	91	1	2	9	
12	0	3	0	52	0	13	0	92	1	3	0	
13	0	3	3	53	0	13	3	93	1	3	3	
14	0	3	6	54	0	13	6	94	1	3	6	
15	0	3	9	55	0	13	9	95	1	3	9	
16	0	4	0	56	0	14	0	96	1	4	0	
17	0	4	3	57	0	14	3	97	1	4	3	
18	0	4	6	58	0	14	6	98	1	4	6	
19	0	4	9	59	0	14	9	99	1	4	9	
20	0	5	0	60	0	15	0	100	1	5	0	
21	0	5	3	61	0	15	3	200	2	10	0	
22	0	5	6	62	0	15	6	300	3	15	0	
23	0	5	9	63	0	15	9	400	5	0	0	
24	0	6	0	64	0	16	0	500	6	5	0	
25	0	6	3	65	0	16	3	600	7	10	0	
26	0	6	6	66	0	16	6	700	8	15	0	
27	0	6	9	67	0	16	9	800	10	0	0	
28	0	7	0	68	0	17	0	900	11	5	0	
29	0	7	3	69	0	17	3	1000	12	10	0	
30	0	7	6	70	0	17	6					
31	0	7	9	71	0	17	9	2000	25	0	0	
32	0	8	0	72	0	18	0	3000	37	10	0	
33	0	8	3	73	0	18	3	4000	50	0	0	
34	0	8	6	74	0	18	6	5000	62	10	0	
35	0	8	9	75	0	18	9	6000	75	0	0	
36	0	9	0	76	0	19	0	7000	87	10	0	
37	0	9	3	77	0	19	3	8000	100	0	0	
38	0	9	6	78	0	19	6	9000	112	10	0	
39	0	9	9	79	0	19	9	10000	125	0	0	
40	0	10	0	80	0	20	0	20000	250	0	0	

The Price of any thing, being 4 Pence.

Numb.	V.			N.	V.			N.	V.		
	l.	s.	d.								
1	0	0	8	41	0	13	8	81	1	7	0
2	0	0	8	42	0	14	0	82	1	7	4
3	0	1	0	43	0	14	4	83	1	7	8
4	0	1	4	44	0	14	8	84	1	8	0
5	0	1	8	45	0	15	0	85	1	8	4
6	0	2	0	46	0	15	4	86	1	8	8
7	0	2	4	47	0	15	8	87	1	9	0
8	0	2	8	48	0	16	0	88	1	9	4
9	0	3	0	49	0	16	4	89	1	9	8
10	0	3	4	50	0	16	8	90	1	10	0
11	0	3	8	51	0	17	0	91	1	10	4
12	0	4	0	52	0	17	4	92	1	10	8
13	0	4	4	53	0	17	8	93	1	11	0
14	0	4	8	54	0	18	0	94	1	11	4
15	0	5	0	55	0	18	4	95	1	11	8
16	0	5	4	56	0	18	8	96	1	12	0
17	0	5	8	57	0	19	0	97	1	12	4
18	0	6	0	58	0	19	4	98	1	12	8
19	0	6	4	59	0	19	8	99	1	13	0
20	0	6	8	60	1	0	0	100	1	13	4
21	0	7	0	61	1	0	4	200	3	6	8
22	0	7	4	62	1	0	8	300	5	0	0
23	0	7	8	63	1	1	0	400	6	13	4
24	0	8	0	64	1	1	4	500	8	6	8
25	0	8	4	65	1	1	8	600	10	0	0
26	0	8	8	66	1	2	0	700	11	13	4
27	0	9	0	67	1	2	4	800	13	6	8
28	0	9	4	68	1	2	8	900	15	0	0
29	0	9	8	69	1	3	0	1000	16	13	4
30	0	10	0	70	1	3	4				
31	0	10	4	71	1	3	8	2000	33	6	8
32	0	10	8	72	1	4	0	3000	50	0	0
33	0	11	0	73	1	4	4	4000	66	13	4
34	0	11	4	74	1	4	8	5000	83	6	8
35	0	11	8	75	1	5	0	6000	100	0	0
36	0	12	0	76	1	5	4	7000	116	13	4
37	0	12	4	77	1	5	8	8000	133	6	8
38	0	12	8	78	1	6	0	9000	150	0	0
39	0	13	0	79	1	6	4	10000	166	13	4
40	0	13	4	80	1	6	8	20000	333	6	8

Numb.	The Price of any thing, being 5 Pence.														
	V.			N.	V.			N.	V.						
	<i>l.</i>	<i>s.</i>	<i>d.</i>												
2	0	0	10	41	0	17	1	81	1	13	9				
3	0	1	3	42	0	17	6	82	1	14	2				
4	0	1	8	43	0	17	11	83	1	14	7				
5	0	2	1	44	0	18	4	84	1	15	0				
6	0	2	6	45	0	18	9	85	1	15	5				
7	0	2	11	46	0	19	2	86	1	15	10				
8	0	3	4	47	0	19	7	87	1	16	3				
9	0	3	9	48	1	0	0	88	1	16	8				
10	0	4	2	49	1	0	5	89	1	17	1				
				50	1	0	10	90	1	17	6				
11	0	4	7	51	1	1	3	91	1	17	11				
12	0	5	0	52	1	1	8	92	1	18	4				
13	0	5	5	53	1	2	1	93	1	18	9				
14	0	5	10	54	1	2	6	94	1	19	2				
15	0	6	3	55	1	2	11	95	1	19	7				
16	0	6	8	56	1	3	4	96	2	0	0				
17	0	7	1	57	1	3	9	97	2	0	5				
18	0	7	6	58	1	4	2	98	2	0	10				
19	0	7	11	59	1	4	7	99	2	1	3				
20	0	8	4	60	1	5	0	100	2	1	8				
21	0	8	9	61	1	5	5	20	4	3	4				
22	0	9	2	62	1	5	10	300	6	5	0				
23	0	9	7	63	1	6	3	400	8	6	8				
24	0	10	0	64	1	6	8	500	10	8	4				
25	0	10	5	65	1	7	1	600	12	10	0				
26	0	10	10	66	1	7	6	700	14	11	8				
27	0	11	3	67	1	7	11	800	16	13	4				
28	0	11	8	68	1	8	4	900	18	15	0				
29	0	12	1	69	1	8	9	1000	20	16	8				
30	0	12	6	70	1	9	2								
31	0	12	11	71	1	9	7	2000	41	13	4				
32	0	13	4	72	1	10	0	3000	62	10	0				
33	0	13	9	73	1	10	5	4000	83	6	8				
34	0	14	2	74	1	10	10	5000	104	3	4				
35	0	14	7	75	1	11	3	6000	125	0	0				
36	0	15	0	76	1	11	8	7000	145	16	8				
37	0	15	5	77	1	12	1	8000	166	13	4				
38	0	15	10	78	1	12	6	9000	187	10	0				
39	0	16	3	79	1	12	11	10000	208	6	8				
40	0	16	8	80	1	13	4	20000	416	13	4				

The

The Price of any thing, being 6 Pence.											
Numb	V.			N.	V.			N.	V.		
	l.	s.	d.		l.	s.	d.		l.	s.	d.
1	0	1	0	41	1	0	6	81	2	0	6
2	0	1	0	42	1	1	0	82	2	1	0
3	0	1	6	43	1	1	6	83	2	1	6
4	0	2	0	44	1	2	0	84	2	2	0
5	0	2	6	45	1	2	6	85	2	2	6
6	0	3	0	46	1	3	0	86	2	3	0
7	0	3	6	47	1	3	6	87	2	3	6
8	0	4	0	48	1	4	0	88	2	4	0
9	0	4	6	49	1	4	6	89	2	4	6
10	0	5	0	50	1	5	0	90	2	5	0
11	0	5	6	51	1	5	6	91	2	5	6
12	0	6	0	52	1	6	0	92	2	6	0
13	0	6	6	53	1	6	6	93	2	6	6
14	0	7	0	54	1	7	0	94	2	7	0
15	0	7	6	55	1	7	6	95	2	7	6
16	0	8	0	56	1	8	0	96	2	8	0
17	0	8	6	57	1	8	6	97	2	8	6
18	0	9	0	58	1	9	0	98	2	9	0
19	0	9	6	59	1	9	6	99	2	9	6
20	0	10	0	60	1	10	0	100	2	10	0
21	0	10	6	61	1	10	6	200	5	0	0
22	0	11	0	62	1	11	0	300	7	10	0
23	0	11	6	63	1	11	6	400	10	0	0
24	0	12	0	64	1	12	0	500	12	10	0
25	0	12	6	65	1	12	6	600	15	0	0
26	0	13	0	66	1	13	0	700	17	10	0
27	0	13	6	67	1	13	6	800	20	0	0
28	0	14	0	68	1	14	0	900	22	10	0
29	0	14	6	69	1	14	6	1000	25	0	0
30	0	15	0	70	1	15	0				
31	0	15	6	71	1	15	6	2000	50	0	0
32	0	16	0	72	1	16	0	3000	75	0	0
33	0	16	6	73	1	16	6	4000	90	0	0
34	0	17	0	74	1	17	0	5000	225	0	0
35	0	17	6	75	1	17	6	6000	250	0	0
36	0	18	0	76	1	18	0	7000	175	0	0
37	0	18	6	77	1	18	6	8000	200	0	0
38	0	19	0	78	1	19	0	9000	225	0	0
39	0	19	6	79	1	19	6	10000	250	0	0
40	1	0	0	80	2	0	0	20000	500	0	0

Numb.	The Price of any thing, being 7 Pence.											
	V.			N.			V.			N.		
	<i>l.</i>	<i>s.</i>	<i>d.</i>									
2	0	1	2	41	1	3	11		81	2	7	3
3	0	1	9	42	1	4	6		82	2	7	10
4	0	2	4	43	1	5	1		83	2	8	5
5	0	2	11	44	1	5	8		84	2	9	0
6	0	3	6	45	1	6	3		85	2	9	7
7	0	3	13	46	1	6	10		86	2	10	2
8	0	4	1	47	1	7	5		87	2	10	9
9	0	4	8	48	1	8	0		88	2	11	4
10	0	5	3	49	1	8	7		89	2	12	11
	0	5	10	50	1	9	2		90	2	12	6
11	0	6	5	51	1	9	9		91	2	13	1
12	0	7	0	52	1	10	4		92	2	13	8
13	0	7	7	53	1	10	11		93	2	14	3
14	0	8	2	54	1	11	6		94	2	14	10
15	0	8	9	55	1	12	1		95	2	15	5
16	0	9	4	56	1	12	8		96	2	16	0
17	0	9	11	57	1	13	3		97	2	16	7
18	0	10	6	58	1	13	10		98	2	17	2
19	0	11	1	59	1	14	5		99	2	17	9
20	0	11	8	60	1	15	0		100	2	18	4
21	0	12	3	61	1	15	7		200	5	16	8
22	0	12	10	62	1	16	2		300	8	15	0
23	0	13	5	63	1	16	9		400	11	13	4
24	0	14	0	64	1	17	4		500	14	11	8
25	0	14	7	65	1	17	11		600	17	10	0
26	0	15	2	66	1	18	6		700	20	8	4
27	0	15	9	67	1	19	1		800	23	6	8
28	0	16	4	68	1	19	8		900	26	5	0
29	0	16	11	69	2	0	3		1000	29	3	4
30	0	17	6	70	2	0	10					
31	0	18	1	71	2	1	5		2000	58	6	8
32	0	18	8	72	2	2	0		3000	87	10	0
33	0	19	3	73	2	2	7		4000	116	13	4
34	0	19	10	74	2	3	2		5000	145	16	8
35	1	0	5	75	2	3	9		6000	175	0	0
36	1	1	0	76	2	4	4		7000	204	3	4
37	1	1	7	77	2	4	11		8000	233	6	8
38	1	2	2	78	2	5	6		9000	262	10	0
39	1	2	9	79	2	6	1		10000	291	13	4
40	1	3	4	80	2	6	8		20000	875	0	0

The Price of any thing, being 8 Pence.													
Numb.		V.			N.			V.			N.		
		l.	s.	d.									
3					41	1	7	4	81	2	14	0	
10	2	0	1	4	42	1	8	0	82	2	14	8	
5	3	0	2	0	43	1	8	8	83	2	15	4	
0	4	0	2	8	44	1	9	4	84	2	16	0	
7	5	0	3	4	45	1	10	0	85	2	16	8	
2	6	0	4	0	46	1	10	8	86	2	17	4	
9	7	0	4	8	47	1	11	4	87	2	18	0	
4	8	0	5	4	48	1	12	0	88	2	18	8	
11	9	0	6	0	49	1	12	8	89	2	19	4	
6	10	0	6	8	50	1	13	4	90	3	0	0	
1	11	0	7	4	51	1	14	0	91	3	0	8	
8	12	0	8	0	52	1	14	8	92	3	1	4	
3	13	0	8	8	53	1	15	4	93	3	2	0	
10	14	0	9	4	54	1	16	0	94	3	2	8	
5	15	0	10	0	55	1	16	8	95	3	3	4	
0	16	0	10	8	56	1	17	4	96	3	4	0	
7	17	0	11	4	57	1	18	0	97	3	4	8	
2	18	0	12	0	58	1	18	8	98	3	5	4	
9	19	0	12	8	59	1	19	4	99	3	6	0	
4	20	0	13	4	60	2	0	0	100	3	6	8	
8	21	0	14	0	61	2	0	8	200	6	13	4	
0	22	0	14	8	62	2	1	4	300	10	0	0	
4	23	0	15	4	63	2	2	0	400	13	6	8	
8	24	0	16	0	64	2	2	8	500	16	13	4	
0	25	0	16	8	65	2	3	4	600	20	0	0	
4	26	0	17	4	66	2	4	0	700	23	6	8	
8	27	0	18	0	67	2	4	8	800	26	13	4	
0	28	0	18	8	68	2	5	4	900	30	0	0	
4	29	0	19	4	69	2	6	0	1000	33	6	8	
8	30	1	0	0	70	2	6	8					
0	31	1	0	8	71	2	7	4	2000	66	13	4	
4	32	1	1	4	72	2	8	0	3000	100	0	0	
8	33	1	2	0	73	2	8	8	4000	133	6	8	
0	34	1	2	8	74	2	9	4	5000	166	13	4	
4	35	1	3	4	75	2	10	0	6000	200	0	0	
8	36	1	4	0	76	2	10	8	7000	233	6	8	
0	37	1	4	8	77	2	11	4	8000	266	13	4	
4	38	1	5	4	78	2	12	0	9000	300	0	0	
8	39	1	6	0	79	2	12	8	10000	333	6	8	
0	40	1	6	8	80	2	13	4	20000	666	14	4	

Numb	The Price of any thing, being 9 Pence.									
	V.		N.		V.		N.		V.	
1	0	0	41	1	10	9	81	3	0	9
2	0	1	42	1	11	6	82	3	1	6
3	0	2	43	1	12	3	83	3	2	3
4	0	3	44	1	13	0	84	3	3	0
5	0	3	45	1	13	9	85	3	3	9
6	0	4	46	1	14	6	86	3	4	6
7	0	5	47	1	15	3	87	3	5	3
8	0	6	48	1	16	0	88	3	6	0
9	0	6	49	1	16	9	89	3	6	9
10	0	7	50	1	17	6	90	3	7	6
11	0	8	51	1	18	3	91	3	8	3
12	0	9	52	1	19	0	92	3	9	0
13	0	9	53	1	19	9	93	3	9	9
14	0	10	54	2	0	6	94	3	10	6
15	0	11	55	2	1	3	95	3	11	3
16	0	12	56	2	2	0	96	3	12	0
17	0	12	57	2	2	9	97	3	12	9
18	0	13	58	2	3	6	98	3	13	6
19	0	14	59	2	4	3	99	3	14	3
20	0	15	60	2	5	0	100	3	15	0
21	0	15	61	2	5	9	200	7	10	0
22	0	16	62	2	6	6	300	11	5	0
23	0	17	63	2	7	3	400	15	0	0
24	0	18	64	2	8	0	500	18	15	0
25	0	18	65	2	8	9	600	22	10	0
26	0	19	66	2	9	6	700	26	5	0
27	1	0	67	2	10	3	800	30	0	0
28	1	1	68	2	11	0	900	34	15	0
29	1	1	69	2	11	9	1000	37	10	0
30	1	2	70	2	12	6				
31	1	3	71	2	13	3	2000	75	0	0
32	1	4	72	2	14	0	3000	112	10	0
33	1	4	73	2	14	9	4000	150	0	0
34	1	5	74	2	15	6	5000	187	10	0
35	1	6	75	2	16	3	6000	225	0	0
36	1	7	76	2	17	0	7000	262	10	0
37	1	7	77	2	17	9	8000	300	0	0
38	1	8	78	2	18	6	9000	337	10	0
39	1	9	79	2	19	3	10000	375	0	0
40	1	10	80	2	20	0	20000	750	0	0

The Price of any thing, being 10 Pence.

quan	P.			N.			P.			N.			P.		
	l.	s.	d.												
1				41	1	14	2			81			3	7	6
2	0	1	8	42	1	15	0			82			3	8	4
3	0	2	6	43	1	15	10			83			3	9	2
4	0	3	4	44	1	16	8			84			3	10	0
5	0	4	2	45	1	17	6			85			3	10	10
6	0	5	0	46	1	18	4			86			3	11	8
7	0	5	10	47	1	19	2			87			3	12	6
8	0	6	8	48	2	0	0			88			3	13	4
9	0	7	6	49	2	0	10			89			3	14	2
10	0	8	4	50	2	1	8			90			3	15	0
11	0	9	2	51	2	2	6			91			3	15	10
12	0	10	0	52	2	3	4			92			3	16	8
13	0	10	10	53	2	4	2			93			3	17	6
14	0	11	8	54	2	5	0			94			3	18	4
15	0	12	6	55	2	5	10			95			3	19	2
16	0	13	4	56	2	6	8			96			4	0	0
17	0	14	2	57	2	7	6			97			4	0	10
18	0	15	0	58	2	8	4			98			4	1	8
19	0	15	10	59	2	9	2			99			4	2	6
20	0	16	8	60	2	10	0			100			4	3	4
21	0	17	6	61	2	10	10			200			8	6	8
22	0	18	4	62	2	11	8			300			12	10	0
23	0	19	2	63	2	12	6			400			16	13	4
24	1	0	0	64	2	13	4			500			20	16	8
25	1	0	10	65	2	14	2			600			25	0	0
26	1	1	8	66	2	15	0			700			29	3	4
27	1	2	6	67	2	15	10			800			33	6	8
28	1	3	4	68	2	16	8			900			37	10	0
29	1	4	2	69	2	17	6			1000			41	13	4
30	1	5	0	70	2	18	4								
31	1	5	10	71	2	19	2			2000			83	6	8
32	1	6	8	72	3	0	0			3000			125	0	0
33	1	7	6	73	3	0	10			4000			166	13	4
34	1	8	4	74	3	1	8			5000			208	6	8
35	1	9	2	75	3	2	6			6000			250	0	0
36	1	10	0	76	3	3	4			7000			291	13	4
37	1	10	10	77	3	4	2			8000			333	6	8
38	1	11	8	78	3	5	0			9000			375	0	0
39	1	12	6	79	3	5	10			10000			416	13	4
40	1	13	4	80	3	6	8			20000			833	16	8

The

Numb	The Price of any thing, being 11 Pence.											
	V.			N.			V.			N.		
	l.	s.	d.	41	1	17	7	81	3	14	3	
2	0	1	10	42	1	18	6	82	3	15	2	
3	0	2	9	43	1	19	5	83	3	16	1	
4	0	3	8	44	2	0	4	84	3	17	0	
5	0	4	7	45	2	1	3	85	3	17	11	
6	0	5	6	46	2	2	2	86	3	18	10	
7	0	6	5	47	2	3	1	87	3	19	9	
8	0	7	4	48	2	4	0	88	4	0	8	
9	0	8	3	49	2	4	11	89	4	1	7	
10	0	9	2	50	2	5	10	90	4	2	6	
11	0	10	1	51	2	6	9	91	4	3	5	
12	0	11	0	52	2	7	8	92	4	4	4	
13	0	11	11	53	2	8	7	93	4	5	3	
14	0	12	10	54	2	9	6	94	4	6	2	
15	0	13	9	55	2	10	5	95	4	7	1	
16	0	14	8	56	2	11	4	96	4	8	0	
17	0	15	7	57	2	12	3	97	4	8	11	
18	0	16	6	58	2	13	2	98	4	9	10	
19	0	17	5	59	2	14	1	99	4	10	9	
20	0	18	4	60	2	15	0	100	4	11	8	
21	0	19	3	61	2	15	11	200	9	3	4	
22	1	0	2	62	2	16	10	300	13	15	0	
23	1	1	1	63	2	17	9	400	18	6	8	
24	1	2	0	64	2	18	8	500	22	18	4	
25	1	2	11	65	2	19	7	600	27	10	0	
26	1	3	10	66	3	0	6	700	32	1	8	
27	1	4	9	67	3	1	5	800	36	13	4	
28	1	5	8	68	3	2	4	900	41	5	0	
29	1	6	7	69	3	3	3	1000	45	16	8	
30	1	7	6	70	3	4	2					
31	1	8	5	71	3	5	1	2000	91	13	4	
32	1	9	4	72	3	6	0	3000	137	10	0	
33	1	10	3	73	3	6	11	4000	183	6	8	
34	1	11	2	74	3	7	10	5000	229	3	4	
35	1	12	1	75	3	8	9	6000	275	0	0	
36	1	13	0	76	3	9	8	7000	320	16	8	
37	1	13	11	77	3	10	7	8000	366	13	4	
38	1	14	10	78	3	11	6	9000	412	10	0	
39	1	15	9	79	3	12	5	10000	458	6	8	
40	1	16	8	80	3	13	4	20000	916	13	4	

The Price of any thing, being 1 Shilling.

Numb.	V.			N.	V.			N.	V.		
	l.	s.	d.								
1	0	0	0	41	2	1	0	81	4	1	0
2	0	2	0	42	2	2	0	82	4	2	0
3	0	3	0	43	2	3	0	83	4	3	0
4	0	4	0	44	2	4	0	84	4	4	0
5	0	5	0	45	2	5	0	85	4	5	0
6	0	6	0	46	2	6	0	86	4	6	0
7	0	7	0	47	2	7	0	87	4	7	0
8	0	8	0	48	2	8	0	88	4	8	0
9	0	9	0	49	2	9	0	89	4	9	0
10	0	10	0	50	2	10	0	90	4	10	0
11	0	11	0	51	2	11	0	91	4	11	0
12	0	12	0	52	2	12	0	92	4	12	0
13	0	13	0	53	2	13	0	93	4	13	0
14	0	14	0	54	2	14	0	94	4	14	0
15	0	15	0	55	2	15	0	95	4	15	0
16	0	16	0	56	2	16	0	96	4	16	0
17	0	17	0	57	2	17	0	97	4	17	0
18	0	18	0	58	2	18	0	98	4	18	0
19	0	19	0	59	2	19	0	99	4	19	0
20	1	0	0	60	3	0	0	100	5	0	0
21	1	1	0	61	3	1	0	200	10	0	0
22	1	2	0	62	3	2	0	300	15	0	0
23	1	3	0	63	3	3	0	400	20	0	0
24	1	4	0	64	3	4	0	500	25	0	0
25	1	5	0	65	3	5	0	600	30	0	0
26	1	6	0	66	3	6	0	700	35	0	0
27	1	7	0	67	3	7	0	800	40	0	0
28	1	8	0	68	3	8	0	900	45	0	0
29	1	9	0	69	3	9	0	1000	50	0	0
30	1	10	0	70	3	10	0				
31	1	11	0	71	3	11	0	2000	100	0	0
32	1	12	0	72	3	12	0	3000	150	0	0
33	1	13	0	73	3	13	0	4000	200	0	0
34	1	14	0	74	3	14	0	5000	250	0	0
35	1	15	0	75	3	15	0	6000	300	0	0
36	1	16	0	76	3	16	0	7000	350	0	0
37	1	17	0	77	3	17	0	8000	400	0	0
38	1	18	0	78	3	18	0	9000	450	0	0
39	1	19	0	79	3	19	0	10000	500	0	0
40	2	0	0	80	4	0	0	20000	1000	0	0

Numb.	The Price of any thing, being 2 Shillings.											
	V.			N.	V.			N.	V.			
	l.	s.	d.									
2	0	4	0	41	4	2	0	81	8	2	0	
3	0	6	0	42	4	4	0	82	8	4	0	
4	0	8	0	43	4	6	0	83	8	6	0	
5	0	10	0	44	4	8	0	84	8	8	0	
6	0	12	0	45	4	10	0	85	8	10	0	
7	0	14	0	46	4	12	0	86	8	12	0	
8	0	16	0	47	4	14	0	87	8	14	0	
9	0	18	0	48	4	16	0	88	8	16	0	
10	1	0	0	49	4	18	0	89	8	18	0	
	1	0	0	50	5	0	0	90	9	0	0	
11	1	2	0	51	5	2	0	91	9	2	0	
12	1	4	0	52	5	4	0	92	9	4	0	
13	1	6	0	53	5	6	0	93	9	6	0	
14	1	8	0	54	5	8	0	94	9	8	0	
15	1	10	0	55	5	10	0	95	9	10	0	
16	1	12	0	56	5	12	0	96	9	12	0	
17	1	14	0	57	5	14	0	97	9	14	0	
18	1	16	0	58	5	16	0	98	9	16	0	
19	1	18	0	59	5	18	0	99	9	18	0	
20	2	0	0	60	6	0	0	100	10	0	0	
21	2	2	0	61	6	2	0	200	20	0	0	
22	2	4	0	62	6	4	0	300	30	0	0	
23	2	6	0	63	6	6	0	400	40	0	0	
24	2	8	0	64	6	8	0	500	50	0	0	
25	2	10	0	65	6	10	0	600	60	0	0	
26	2	12	0	66	6	12	0	700	70	0	0	
27	2	14	0	67	6	14	0	800	80	0	0	
28	2	16	0	68	6	16	0	900	90	0	0	
29	2	18	0	69	6	18	0	1000	100	0	0	
30	3	0	0	70	7	0	0					
31	3	2	0	71	7	2	0	2000	200	0	0	
32	3	4	0	72	7	4	0	3000	300	0	0	
33	3	6	0	73	7	6	0	4000	400	0	0	
34	3	8	0	74	7	8	0	5000	500	0	0	
35	3	10	0	75	7	10	0	6000	600	0	0	
36	3	12	0	76	7	12	0	7000	700	0	0	
37	3	14	0	77	7	14	0	8000	800	0	0	
38	3	16	0	78	7	16	0	9000	900	0	0	
39	3	18	0	79	7	18	0	10000	1000	0	0	
40	4	0	0	80	8	0	0	20000	2000	0	0	

The Price of any thing, being 3 Shillings.

Numb	V.			N.	V.			N.	V.		
	l.	s.	d.		l.	s.	d.		l.	s.	d.
1	0	6	0	41	6	3	0	81	12	3	0
2	0	6	0	42	6	6	0	82	12	6	0
3	0	9	0	43	6	9	0	83	12	9	0
4	0	12	0	44	6	12	0	84	12	12	0
5	0	15	0	45	6	15	0	85	12	15	0
6	0	18	0	46	6	18	0	86	12	18	0
7	1	1	0	47	7	1	0	87	13	1	0
8	1	4	0	48	7	4	0	88	13	4	0
9	1	7	0	49	7	7	0	89	13	7	0
10	1	10	0	50	7	10	0	90	13	10	0
11	1	13	0	51	7	13	0	91	13	13	0
12	1	16	0	52	7	16	0	92	13	16	0
13	1	19	0	53	7	19	0	93	13	19	0
14	2	2	0	54	8	2	0	94	14	2	0
15	2	5	0	55	8	5	0	95	14	5	0
16	2	8	0	56	8	8	0	96	14	8	0
17	2	11	0	57	8	11	0	97	14	11	0
18	2	14	0	58	8	14	0	98	14	14	0
19	2	17	0	59	8	17	0	99	14	17	0
20	3	0	0	60	9	0	0	100	15	0	0
21	3	3	0	61	9	3	0	200	30	0	0
22	3	6	0	62	9	6	0	300	45	0	0
23	3	9	0	63	9	9	0	400	60	0	0
24	3	12	0	64	9	12	0	500	75	0	0
25	3	15	0	65	9	15	0	600	90	0	0
26	3	18	0	66	9	18	0	700	105	0	0
27	4	1	0	67	10	1	0	800	120	0	0
28	4	4	0	68	10	4	0	900	135	0	0
29	4	7	0	69	10	7	0	1000	150	0	0
30	4	10	0	70	10	10	0				
31	4	13	0	71	10	13	0	2000	300	0	0
32	4	16	0	72	10	16	0	3000	450	0	0
33	4	19	0	73	10	19	0	4000	600	0	0
34	5	2	0	74	11	2	0	5000	750	0	0
35	5	5	0	75	11	5	0	6000	900	0	0
36	5	8	0	76	11	8	0	7000	1050	0	0
37	5	11	0	77	11	11	0	8000	1200	0	0
38	5	14	0	78	11	14	0	9000	1350	0	0
39	5	17	0	79	11	17	0	10000	1500	0	0
40	6	0	0	80	12	0	0	20000	3000	0	0

Numb. Z	The Price of any thing, being 4 Shillings.											
	V.			N.			V.			N.		
	l.	s.	d.									
2	0	8	0	41	8	4 0	81	16	4 0			
3	0	12	0	42	8	8 0	82	16	8 0			
4	0	16	0	43	8	12 0	83	16	12 0			
5	1	0	0	44	8	16 0	84	16	16 0			
6	1	4	0	45	9	0 0	85	17	0 0			
7	1	8	0	46	9	4 0	86	17	4 0			
8	1	12	0	47	9	8 0	87	17	8 0			
9	1	16	0	48	9	12 0	88	17	12 0			
10	2	0	0	49	9	16 0	89	17	16 0			
11	2	4	0	50	10	0 0	90	18	0 0			
12	2	8	0	51	10	4 0	91	18	4 0			
13	2	12	0	52	10	8 0	92	18	8 0			
14	2	16	0	53	10	12 0	93	18	12 0			
15	3	0	0	54	10	16 0	94	18	16 0			
16	3	4	0	55	11	0 0	95	19	0 0			
17	3	8	0	56	11	4 0	96	19	4 0			
18	3	12	0	57	11	8 0	97	19	8 0			
19	3	16	0	58	11	12 0	98	19	12 0			
20	4	0	0	59	11	16 0	99	19	16 0			
21	4	4	0	60	12	0 0	100	20	0 0			
22	4	8	0	61	12	4 0	200	40	0 0			
23	4	12	0	62	12	8 0	300	60	0 0			
24	4	16	0	63	12	12 0	400	80	0 0			
25	5	0	0	64	12	16 0	500	100	0 0			
26	5	4	0	65	13	0 0	600	120	0 0			
27	5	8	0	66	13	4 0	700	140	0 0			
28	5	12	0	67	13	8 0	800	160	0 0			
29	5	16	0	68	13	12 0	900	180	0 0			
30	6	0	0	69	13	16 0	1000	200	0 0			
31	6	4	0	70	14	0 0						
32	6	8	0	71	14	4 0	2000	400	0 0			
33	6	12	0	72	14	8 0	3000	600	0 0			
34	6	16	0	73	14	12 0	4000	800	0 0			
35	7	0	0	74	14	16 0	5000	1000	0 0			
36	7	4	0	75	15	0 0	6000	1200	0 0			
37	7	8	0	76	15	4 0	7000	1400	0 0			
38	7	12	0	77	15	8 0	8000	1600	0 0			
39	7	16	0	78	15	12 0	9000	1800	0 0			
40	8	0	0	79	15	16 0	10000	2000	0 0			
				80	16	0 0	20000	4000	0 0			

The

Num.

The Price of any thing, being 8 Shillings.

V. N. V. N. V.

l. s. d.

2	0	10	0	41	10	5	0	81	20	5	0
3	0	15	0	42	10	10	0	82	20	10	0
4	1	0	0	43	10	15	0	83	20	15	0
5	1	5	0	44	11	0	0	84	21	0	0
6	1	10	0	45	11	5	0	85	21	5	0
7	1	15	0	46	11	10	0	86	21	10	0
8	2	0	0	47	11	15	0	87	21	15	0
9	2	5	0	48	12	0	0	88	22	0	0
10	2	10	0	49	12	5	0	89	22	5	0
11	2	15	0	50	12	10	0	90	22	10	0
12	3	0	0	51	12	15	0	91	22	15	0
13	3	5	0	52	13	0	0	92	23	0	0
14	3	10	0	53	13	5	0	93	23	5	0
15	3	15	0	54	13	10	0	94	23	10	0
16	4	0	0	55	13	15	0	95	23	15	0
17	4	5	0	56	14	0	0	96	24	0	0
18	4	10	0	57	14	5	0	97	24	5	0
19	4	15	0	58	14	10	0	98	24	10	0
20	5	0	0	59	14	15	0	99	24	15	0
21	5	5	0	60	15	0	0	100	25	0	0
22	5	10	0	61	15	5	0	200	50	0	0
23	5	15	0	62	15	10	0	300	75	0	0
24	6	0	0	63	15	15	0	400	100	0	0
25	6	5	0	64	16	0	0	500	125	0	0
26	6	10	0	65	16	5	0	600	150	0	0
27	6	15	0	66	16	10	0	700	175	0	0
28	7	0	0	67	16	15	0	800	200	0	0
29	7	5	0	68	17	0	0	900	225	0	0
30	7	10	0	69	17	5	0	1000	250	0	0
31	7	15	0	70	17	10	0				
32	8	0	0	71	17	15	0	2000	500	0	0
33	8	5	0	72	18	0	0	3000	750	0	0
34	8	10	0	73	18	5	0	4000	1000	0	0
35	8	15	0	74	18	10	0	5000	1250	0	0
36	9	0	0	75	18	15	0	6000	1500	0	0
37	9	5	0	76	19	0	0	7000	1750	0	0
38	9	10	0	77	19	5	0	8000	2000	0	0
39	9	15	0	78	19	10	0	9000	2250	0	0
40	10	0	0	79	19	15	0	10000	2500	0	0
				80	20	0	0	20000	5000	0	0

The

Numb	The Price of any thing, being 6 Shillings.									
	V.		N.	V.		N.	V.		N.	
	l.	s. d.								
1			41	12	6 0	81	24	6 0		
2	0	12 0	42	12	12 0	82	24	12 0		
3	0	18 0	43	12	18 0	83	24	18 0		
4	1	4 0	44	13	4 0	84	25	4 0		
5	1	10 0	45	13	10 0	85	25	10 0		
6	1	16 0	46	13	16 0	86	25	16 0		
7	2	2 0	47	14	2 0	87	26	2 0		
8	2	8 0	48	14	8 0	88	26	8 0		
9	2	14 0	49	14	14 0	89	26	14 0		
10	2	0 0	50	15	0 0	90	27	0 0		
11	3	6 0	51	15	6 0	91	27	6 0		
12	3	12 0	52	15	12 0	92	27	12 0		
13	3	18 0	53	15	18 0	93	27	18 0		
14	4	4 0	54	16	4 0	94	28	4 0		
15	4	10 0	55	16	10 0	95	28	10 0		
16	4	16 0	56	16	16 0	96	28	16 0		
17	5	2 0	57	17	2 0	97	29	2 0		
18	5	8 0	58	17	8 0	98	29	8 0		
19	5	14 0	59	17	14 0	99	29	14 0		
20	6	0 0	60	18	0 0	100	30	0 0		
21	6	6 0	61	18	6 0	200	60	0 0		
22	6	12 0	62	18	12 0	300	90	0 0		
23	6	18 0	63	18	18 0	400	120	0 0		
24	7	4 0	64	19	4 0	500	150	0 0		
25	7	10 0	65	19	10 0	600	180	0 0		
26	7	16 0	66	19	16 0	700	210	0 0		
27	8	2 0	67	20	2 0	800	240	0 0		
28	8	8 0	68	20	8 0	900	270	0 0		
29	8	14 0	69	20	14 0	1000	300	0 0		
30	9	0 0	70	21	0 0					
31	9	6 0	71	21	6 0	2000	600	0 0		
32	9	12 0	72	21	12 0	3000	900	0 0		
33	9	18 0	73	21	18 0	4000	1200	0 0		
34	10	4 0	74	22	4 0	5000	1500	0 0		
35	10	10 0	75	22	10 0	6000	1800	0 0		
36	10	16 0	76	22	16 0	7000	2100	0 0		
37	11	2 0	77	23	2 0	8000	2400	0 0		
38	11	8 0	78	23	8 0	9000	2700	0 0		
39	11	14 0	79	23	14 0	10000	3000	0 0		
40	12	0 0	80	23	0 0	20000	6000	0 0		

The

The Price of any thing, being 7 Shillings.

Numb	V.			N.			V.		
	l.	s.	d.	41	14	7 0	81	28	7 0
2	0	14	0	42	14	14 0	82	28	14 0
3	1	1	0	43	15	1 0	83	29	1 0
4	1	8	0	44	15	8 0	84	29	8 0
5	1	15	0	45	15	15 0	85	29	15 0
6	2	2	0	46	16	2 0	86	30	2 0
7	2	9	0	47	16	9 0	87	30	9 0
8	2	16	0	48	16	16 0	88	30	16 0
9	3	3	0	49	17	3 0	89	31	3 0
10	3	10	0	50	17	10 0	90	31	10 0
11	3	17	0	51	17	17 0	91	31	17 0
12	4	4	0	52	18	4 0	92	32	4 0
13	4	11	0	53	18	11 0	93	32	11 0
14	4	18	0	54	18	18 0	94	32	18 0
15	5	5	0	55	19	5 0	95	33	5 0
16	5	12	0	56	19	12 0	96	33	12 0
17	5	19	0	57	19	19 0	97	33	19 0
18	6	6	0	58	20	6 0	98	34	6 0
19	6	13	0	59	20	13 0	99	34	13 0
20	7	0	0	60	21	0 0	100	35	0 0
21	7	7	0	61	21	7 0	200	70	0 0
22	7	14	0	62	21	14 0	300	105	0 0
23	8	1	0	63	22	1 0	400	140	0 0
24	8	8	0	64	22	8 0	500	175	0 0
25	8	15	0	65	22	15 0	600	210	0 0
26	9	2	0	66	23	2 0	700	245	0 0
27	9	9	0	67	23	9 0	800	280	0 0
28	9	16	0	68	23	16 0	900	315	0 0
29	10	3	0	69	24	3 0	1000	350	0 0
30	10	10	0	70	24	10 0			
31	10	17	0	71	24	17 0	2000	700	0 0
32	11	4	0	72	25	4 0	3000	1050	0 0
33	11	11	0	73	25	11 0	4000	1400	0 0
34	11	18	0	74	25	18 0	5000	1750	0 0
35	12	5	0	75	26	5 0	6000	2100	0 0
36	12	12	0	76	26	12 0	7000	2450	0 0
37	12	19	0	77	26	19 0	8000	2800	0 0
38	13	6	0	78	27	6 0	9000	3150	0 0
39	13	13	0	79	27	13 0	10000	3500	0 0
40	14	0	0	80	28	0 0	20000	7000	0 0

Numb.

The Price of any thing, being 8 Shillings.

Numb.	V.			N.			V.			N.			V.		
	l.	s.	d.	41	15	8	0	81	32	8	0	81	32	8	0
2	0	16	0	42	16	16	0	82	32	16	0	82	32	16	0
3	1	4	0	43	17	4	0	83	33	4	0	83	33	4	0
4	1	12	0	44	17	12	0	84	33	12	0	84	33	12	0
5	2	0	0	45	18	0	0	85	34	0	0	85	34	0	0
6	2	8	0	46	18	8	0	86	34	8	0	86	34	8	0
7	2	16	0	47	18	16	0	87	34	16	0	87	34	16	0
8	3	4	0	48	19	4	0	88	35	4	0	88	35	4	0
9	3	12	0	49	19	12	0	89	35	12	0	89	35	12	0
10	4	0	0	50	20	0	0	90	36	0	0	90	36	0	0
11	4	8	0	51	20	8	0	91	36	8	0	91	36	8	0
12	4	16	0	52	20	16	0	92	36	16	0	92	36	16	0
13	5	4	0	53	21	4	0	93	37	4	0	93	37	4	0
14	5	12	0	54	21	12	0	94	37	12	0	94	37	12	0
15	6	0	0	55	22	0	0	95	38	0	0	95	38	0	0
16	6	8	0	56	22	8	0	96	38	8	0	96	38	8	0
17	6	16	0	57	22	16	0	97	38	16	0	97	38	16	0
18	7	4	0	58	23	4	0	98	39	4	0	98	39	4	0
19	7	12	0	59	23	12	0	99	39	12	0	99	39	12	0
20	8	0	0	60	24	0	0	100	40	0	0	100	40	0	0
21	8	8	0	61	24	8	0	200	80	0	0	200	80	0	0
22	8	16	0	62	24	16	0	300	120	0	0	300	120	0	0
23	9	4	0	63	25	4	0	400	160	0	0	400	160	0	0
24	9	12	0	64	25	12	0	500	200	0	0	500	200	0	0
25	10	0	0	65	26	0	0	600	240	0	0	600	240	0	0
26	10	8	0	66	26	8	0	700	280	0	0	700	280	0	0
27	10	16	0	67	26	16	0	800	320	0	0	800	320	0	0
28	11	4	0	68	27	4	0	900	360	0	0	900	360	0	0
29	11	12	0	69	27	12	0	1000	400	0	0	1000	400	0	0
30	12	0	0	70	28	0	0								
31	12	8	0	71	28	8	0	2000	800	0	0	2000	800	0	0
32	12	16	0	72	28	16	0	3000	1200	0	0	3000	1200	0	0
33	13	4	0	73	29	4	0	4000	1600	0	0	4000	1600	0	0
34	13	12	0	74	29	12	0	5000	2000	0	0	5000	2000	0	0
35	14	0	0	75	30	0	0	6000	2400	0	0	6000	2400	0	0
36	14	8	0	76	30	8	0	7000	2800	0	0	7000	2800	0	0
37	14	16	0	77	30	16	0	8000	3200	0	0	8000	3200	0	0
38	15	4	0	78	31	4	0	9000	3600	0	0	9000	3600	0	0
39	15	12	0	79	31	12	0	10000	4000	0	0	10000	4000	0	0
40	16	0	0	80	32	0	0	20000	8000	0	0	20000	8000	0	0

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The

Numb.

The Price of any thing, being 9 Shillings.

	V.			N.			V.			N.			V.		
	l.	s.	d.												
1				41	18	9	0			81	36	9	0		
2	0	18	0	42	18	18	0			82	36	18	0		
3	1	7	0	43	19	7	0			83	37	7	0		
4	1	16	0	44	19	16	0			84	37	16	0		
5	2	5	0	45	20	5	0			85	38	5	0		
6	2	14	0	46	20	14	0			86	38	14	0		
7	3	3	0	47	21	3	0			87	39	3	0		
8	3	12	0	48	21	12	0			88	39	12	0		
9	4	1	0	49	22	1	0			89	40	1	0		
10	4	10	0	50	22	10	0			90	40	10	0		
11	4	19	0	51	22	19	0			91	40	19	0		
12	5	8	0	52	23	8	0			92	41	8	0		
13	5	17	0	53	23	17	0			93	41	17	0		
14	6	6	0	54	24	6	0			94	42	6	0		
15	6	15	0	55	24	15	0			95	42	15	0		
16	7	4	0	56	25	4	0			96	43	4	0		
17	7	13	0	57	25	13	0			97	43	13	0		
18	8	2	0	58	26	2	0			98	44	2	0		
19	8	11	0	59	26	11	0			99	44	11	0		
20	9	0	0	60	27	0	0			100	45	0	0		
21	9	9	0	61	27	9	0			200	90	0	0		
22	9	18	0	62	27	18	0			300	135	0	0		
23	10	7	0	63	28	7	0			400	180	0	0		
24	10	16	0	64	28	16	0			500	225	0	0		
25	11	5	0	65	29	5	0			600	270	0	0		
26	11	14	0	66	29	14	0			700	315	0	0		
27	12	3	0	67	30	3	0			800	355	0	0		
28	12	12	0	68	30	12	0			900	400	0	0		
29	13	1	0	69	31	1	0			1000	445	0	0		
30	13	10	0	70	31	10	0								
31	13	19	0	71	31	19	0			2000	890	0	0		
32	14	8	0	72	32	8	0			3000	1335	0	0		
33	14	17	0	73	32	17	0			4000	1780	0	0		
34	15	6	0	74	33	6	0			5000	2225	0	0		
35	15	15	0	75	33	15	0			6000	2670	0	0		
36	16	4	0	76	34	4	0			7000	3115	0	0		
37	16	13	0	77	34	13	0			8000	3560	0	0		
38	17	2	0	78	35	2	0			9000	4005	0	0		
39	17	11	0	79	35	11	0			10000	4550	0	0		
40	18	0	0	80	36	0	0			20000	9100	0	0		

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qun

The Price of any thing, being 10 Shillings.

qu	V.			N.	V.			N.	V.		
	l.	s.	d.								
1	1	0	0	41	20	10	0	81	40	10	0
2	1	0	0	42	21	0	0	82	41	0	0
3	1	10	0	43	21	10	0	83	41	10	0
4	2	0	0	44	22	0	0	84	42	0	0
5	2	10	0	45	22	10	0	85	42	10	0
6	3	0	0	46	23	0	0	86	43	0	0
7	3	10	0	47	23	10	0	87	43	10	0
8	4	0	0	48	24	0	0	88	44	0	0
9	4	10	0	49	24	10	0	89	44	10	0
10	5	0	0	50	25	0	0	90	45	0	0
11	5	10	0	51	25	10	0	91	45	10	0
12	6	0	0	52	26	0	0	92	46	0	0
13	6	10	0	53	26	10	0	93	46	10	0
14	7	0	0	54	27	0	0	94	47	0	0
15	7	10	0	55	27	10	0	95	47	10	0
16	8	0	0	56	28	0	0	96	48	0	0
17	8	10	0	57	28	10	0	97	48	10	0
18	9	0	0	58	29	0	0	98	49	0	0
19	9	10	0	59	29	10	0	99	49	10	0
20	10	0	0	60	30	0	0	100	50	0	0
21	10	10	0	61	30	10	0	200	100	0	0
22	11	0	0	62	31	0	0	300	150	0	0
23	11	10	0	63	31	10	0	400	200	0	0
24	12	0	0	64	32	0	0	500	250	0	0
25	12	10	0	65	32	10	0	600	300	0	0
26	13	0	0	66	33	0	0	700	350	0	0
27	13	10	0	67	33	10	0	800	400	0	0
28	14	0	0	68	34	0	0	900	450	0	0
29	14	10	0	69	34	10	0	1000	500	0	0
30	15	0	0	70	35	0	0				
31	15	10	0	71	35	10	0	2000	1000	0	0
32	16	0	0	72	36	0	0	3000	1500	0	0
33	16	10	0	73	36	10	0	4000	2000	0	0
34	17	0	0	74	37	0	0	5000	2500	0	0
35	17	10	0	75	37	10	0	6000	3000	0	0
36	18	0	0	76	38	0	0	7000	3500	0	0
37	18	10	0	77	38	10	0	8000	4000	0	0
38	19	0	0	78	39	0	0	9000	4500	0	0
39	19	10	0	79	39	10	0	10000	5000	0	0
40	20	0	0	80	40	0	0	20000	10000	0	0

The

Numb.

The Price of any thing being 11 Shillings.

	V.			N.			V.			N.			V.		
	L.	S.	d.												
2	1	2	0	41	22	11	0		81	44	11	0			
3	1	13	0	42	23	2	0		82	45	2	0			
4	2	4	0	43	23	13	0		83	45	13	0			
5	2	15	0	44	24	4	0		84	46	4	0			
6	3	6	0	45	24	15	0		85	45	15	0			
7	3	17	0	46	25	6	0		86	47	6	0			
8	4	8	0	47	25	17	0		87	47	17	0			
9	4	19	0	48	26	8	0		88	48	8	0			
10	5	10	0	49	26	19	0		89	48	19	0			
				50	27	10	0		90	49	10	0			
11	6	1	0	51	28	1	0		91	50	1	0			
12	6	12	0	52	28	12	0		92	50	12	0			
13	7	3	0	53	29	3	0		93	51	3	0			
14	7	14	0	54	29	14	0		94	51	14	0			
15	8	5	0	55	30	5	0		95	52	5	0			
16	8	16	0	56	30	16	0		96	52	16	0			
17	9	7	0	57	31	7	0		97	53	7	0			
18	9	18	0	58	31	18	0		98	53	18	0			
19	10	9	0	59	32	9	0		99	54	9	0			
20	11	0	0	60	33	0	0		100	55	0	0			
21	11	11	0	61	33	11	0		200	110	0	0			
22	12	2	0	62	34	2	0		300	165	0	0			
23	12	13	0	63	34	13	0		400	220	0	0			
24	13	4	0	64	35	4	0		500	275	0	0			
25	13	15	0	65	35	15	0		600	330	0	0			
26	14	6	0	66	36	6	0		700	385	0	0			
27	14	17	0	67	36	17	0		800	440	0	0			
28	15	8	0	68	37	8	0		900	495	0	0			
29	15	19	0	69	37	19	0		1000	550	0	0			
30	16	10	0	70	38	10	0								
31	17	1	0	71	39	1	0		2000	1100	0	0			
32	17	12	0	72	39	12	0		3000	1650	0	0			
33	18	3	0	73	40	3	0		4000	2200	0	0			
34	18	14	0	74	40	14	0		5000	2750	0	0			
35	19	5	0	75	41	5	0		6000	3300	0	0			
36	19	16	0	76	41	16	0		7000	3850	0	0			
37	20	7	0	77	42	7	0		8000	4400	0	0			
38	20	18	0	78	42	18	0		9000	4950	0	0			
39	21	9	0	79	43	9	0		10000	5500	0	0			
40	22	0	0	80	44	0	0		20000	11000	0	0			

Numb	The Price of any thing, being 12 Shillings.									
	V.			N.			V.			
2	1	4	0	41	24	12	0	81	48	12
3	1	16	0	42	25	4	0	82	49	4
4	2	8	0	43	25	16	0	83	49	16
5	3	0	0	44	26	8	0	84	50	8
6	3	12	0	45	27	0	0	85	51	0
7	4	4	0	46	27	12	0	86	51	12
8	4	16	0	47	28	4	0	87	52	4
9	5	8	0	48	28	16	0	88	52	16
10	6	0	0	49	29	8	0	89	53	8
11	6	12	0	50	30	0	0	90	54	0
12	7	4	0	51	30	12	0	91	54	12
13	7	16	0	52	31	4	0	92	55	4
14	8	8	0	53	31	16	0	93	55	16
15	9	0	0	54	32	8	0	94	56	8
16	9	12	0	55	33	0	0	95	57	0
17	10	4	0	56	33	12	0	96	57	12
18	10	16	0	57	34	4	0	97	58	4
19	11	8	0	58	34	16	0	98	58	16
20	12	0	0	59	35	8	0	99	59	8
21	12	12	0	60	36	0	0	100	60	0
22	13	4	0	61	36	12	0	200	120	0
23	13	16	0	62	37	4	0	300	180	0
24	14	8	0	63	37	16	0	400	240	0
25	15	0	0	64	38	8	0	500	300	0
26	15	12	0	65	39	0	0	600	360	0
27	16	4	0	66	39	12	0	700	420	0
28	16	16	0	67	40	4	0	800	480	0
29	17	8	0	68	40	16	0	900	540	0
30	18	0	0	69	41	8	0	1000	600	0
31	18	12	0	70	42	0	0			
32	19	4	0	71	42	12	0	2000	1200	0
33	19	16	0	72	43	4	0	3000	1800	0
34	20	8	0	73	43	16	0	4000	2400	0
35	21	0	0	74	44	8	0	5000	3000	0
36	21	12	0	75	45	0	0	6000	3600	0
37	22	4	0	76	45	12	0	7000	4200	0
38	22	16	0	77	46	4	0	8000	4800	0
39	23	8	0	78	46	16	0	9000	5400	0
40	24	0	0	79	47	8	0	10000	6000	0
				80	48	0	0	20000	12000	0

The

The Price of any thing, being 13 Shillings.

Z umh	V.			N.			V.			N.		
	l.	s.	d.									
2	1	6	0	41	26	13	0	81	52	13	0	
3	1	19	0	42	27	6	0	82	53	6	0	
4	2	12	0	43	27	19	0	83	53	19	0	
5	3	5	0	44	28	12	0	84	54	12	0	
6	3	18	0	45	29	5	0	85	55	5	0	
7	4	11	0	46	29	18	0	86	55	18	0	
8	5	4	0	47	30	11	0	87	56	11	0	
9	5	17	0	48	31	4	0	88	57	4	0	
10	6	10	0	49	31	17	0	89	57	17	0	
				50	32	10	0	90	58	10	0	
11	7	3	0	51	33	3	0	91	59	3	0	
12	7	16	0	52	33	16	0	92	59	16	0	
13	8	9	0	53	34	9	0	93	60	9	0	
14	9	2	0	54	35	2	0	94	61	2	0	
15	9	15	0	55	35	15	0	95	61	15	0	
16	10	8	0	56	36	8	0	96	62	8	0	
17	11	1	0	57	37	1	0	97	63	1	0	
18	11	14	0	58	37	14	0	98	63	14	0	
19	12	7	0	59	38	7	0	99	64	7	0	
20	13	0	0	60	39	0	0	100	65	0	0	
21	13	13	0	61	39	13	0	200	130	0	0	
22	14	6	0	62	40	6	0	300	195	0	0	
23	14	19	0	63	40	19	0	400	260	0	0	
24	15	12	0	64	41	12	0	500	325	0	0	
25	16	5	0	65	42	5	0	600	390	0	0	
26	16	18	0	66	42	18	0	700	455	0	0	
27	17	11	0	67	43	11	0	800	520	0	0	
28	18	4	0	68	44	4	0	900	585	0	0	
29	18	17	0	69	44	17	0	1000	650	0	0	
30	19	10	0	70	45	10	0					
31	20	3	0	71	46	3	0	2000	1300	0	0	
32	20	16	0	72	46	16	0	3000	1950	0	0	
33	21	9	0	73	47	9	0	4000	2600	0	0	
34	22	2	0	74	48	2	0	5000	3250	0	0	
35	22	15	0	75	48	15	0	6000	3900	0	0	
36	23	8	0	76	49	8	0	7000	4550	0	0	
37	24	1	0	77	50	1	0	8000	5200	0	0	
38	24	14	0	78	50	14	0	9000	5850	0	0	
39	25	7	0	79	51	7	0	10000	6500	0	0	
40	26	0	0	80	52	0	0	20000	13000	0	0	

The

Numb.	The Price of any thing, being 14 Shillings.									
	V.			N.			V.			
	l.	s.	d.							
2	1	8	0	41	28	14	0	81	56	14
3	2	2	0	42	29	8	0	82	57	8
4	2	16	0	43	30	2	0	83	58	2
5	3	10	0	44	30	16	0	84	58	16
6	4	4	0	45	31	10	0	85	59	10
7	4	18	0	46	32	4	0	86	60	4
8	5	12	0	47	32	18	0	87	60	18
9	6	6	0	48	33	12	0	88	61	12
10	7	0	0	49	34	6	0	89	62	6
11	7	14	0	50	35	0	0	90	63	0
12	8	8	0	51	35	14	0	91	63	14
13	9	2	0	52	36	8	0	92	64	8
14	9	16	0	53	37	2	0	93	65	2
15	10	10	0	54	37	16	0	94	65	16
16	11	4	0	55	38	10	0	95	66	10
17	11	18	0	56	39	4	0	96	67	4
18	12	12	0	57	39	18	0	97	67	18
19	13	6	0	58	40	12	0	98	68	12
20	14	0	0	59	41	6	0	99	69	6
21	14	14	0	60	42	0	0	100	70	0
22	15	8	0	61	42	14	0	200	140	0
23	16	2	0	62	43	8	0	300	210	0
24	16	16	0	63	44	2	0	400	280	0
25	17	10	0	64	44	16	0	500	350	0
26	18	4	0	65	45	10	0	600	420	0
27	18	18	0	66	46	4	0	700	490	0
28	19	12	0	67	46	18	0	800	560	0
29	20	6	0	68	47	12	0	900	630	0
30	21	0	0	69	48	6	0	1000	700	0
31	21	14	0	70	49	0	0			
32	22	8	0	71	49	14	0	2000	1400	0
33	23	2	0	72	50	8	0	3000	2100	0
34	23	16	0	73	51	2	0	4000	2800	0
35	24	10	0	74	51	16	0	5000	3500	0
36	25	4	0	75	52	10	0	6000	4200	0
37	25	18	0	76	53	4	0	7000	4900	0
38	26	12	0	77	53	18	0	8000	5600	0
39	27	6	0	78	54	12	0	9000	6300	0
40	28	0	0	79	55	6	0	10000	7000	0
				80	56	0	0	20000	14000	0

The

The Price of any thing, being 15 Shillings.

Numb	V.			N.	V.			N.	V.		
	l.	s.	d.								
1	1	10	0	41	30	15	0	81	60	15	0
2	1	10	0	42	31	10	0	82	61	10	0
3	2	5	0	43	32	5	0	83	62	5	0
4	3	0	0	44	33	0	0	84	63	0	0
5	3	15	0	45	33	15	0	85	63	15	0
6	4	10	0	46	34	10	0	86	64	10	0
7	5	5	0	47	35	5	0	87	65	5	0
8	6	0	0	48	36	0	0	88	66	0	0
9	6	15	0	49	36	15	0	89	66	15	0
10	7	10	0	50	37	10	0	90	67	10	0
11	8	5	0	51	38	5	0	91	68	5	0
12	9	0	0	52	39	0	0	92	69	0	0
13	9	15	0	53	39	15	0	93	69	15	0
14	10	10	0	54	40	10	0	94	70	10	0
15	11	5	0	55	41	5	0	95	71	5	0
16	12	0	0	56	42	0	0	96	72	0	0
17	12	15	0	57	42	15	0	97	72	15	0
18	13	10	0	58	43	10	0	98	73	10	0
19	14	5	0	59	44	5	0	99	74	5	0
20	15	0	0	60	45	0	0	100	75	0	0
21	15	15	0	61	45	15	0	200	150	0	0
22	16	10	0	62	46	10	0	300	225	0	0
23	17	5	0	63	47	5	0	400	300	0	0
24	18	0	0	64	48	0	0	500	375	0	0
25	18	15	0	65	48	15	0	600	450	0	0
26	19	10	0	66	49	10	0	700	525	0	0
27	20	5	0	67	50	5	0	800	600	0	0
28	21	0	0	68	51	0	0	900	675	0	0
29	21	15	0	69	51	15	0	1000	750	0	0
30	22	10	0	70	52	10	0				
31	23	5	0	71	53	5	0	2000	1500	0	0
32	24	0	0	72	54	0	0	3000	2250	0	0
33	24	15	0	73	54	15	0	4000	3000	0	0
34	25	10	0	44	55	10	0	5000	3750	0	0
35	26	5	0	75	56	5	0	6000	4500	0	0
36	27	0	0	76	57	0	0	7000	5250	0	0
37	27	15	0	77	57	15	0	8000	6000	0	0
38	28	10	0	78	58	10	0	9000	6750	0	0
39	29	5	0	79	59	5	0	10000	7500	0	0
40	30	0	0	80	60	0	0	20000	15000	0	0

Num	The Price of any thing, being 16 Shillings.									
	V.			N.			V.			
	l.	s.	d.							
2	1	12	0	41	32	16	0	81	64	16
3	2	8	0	42	33	12	0	82	65	12
4	3	4	0	43	34	8	0	83	66	8
5	4	0	0	44	35	4	0	84	67	4
6	4	16	0	45	36	0	0	85	68	0
7	5	12	0	46	36	16	0	86	68	16
8	6	8	0	47	37	12	0	87	69	12
9	7	4	0	48	38	8	0	88	70	8
10	8	0	0	49	39	4	0	89	71	4
				50	40	0	0	90	72	0
11	8	16	0	51	40	16	0	91	72	16
12	9	12	0	52	41	12	0	92	73	12
13	10	8	0	53	42	8	0	93	74	8
14	11	4	0	54	43	4	0	94	75	4
15	12	0	0	55	44	0	0	95	76	0
16	12	16	0	56	44	16	0	96	76	16
17	13	12	0	57	45	12	0	97	77	12
18	14	8	0	58	46	8	0	98	78	8
19	15	4	0	59	47	4	0	99	79	4
20	16	0	0	60	48	0	0	100	80	0
21	16	16	0	61	48	16	0	200	160	0
22	17	12	0	62	49	12	0	300	240	0
23	18	8	0	63	50	8	0	400	320	0
24	19	4	0	64	51	4	0	500	400	0
25	20	0	0	65	52	0	0	600	480	0
26	20	16	0	66	52	16	0	700	560	0
27	21	12	0	67	53	12	0	800	640	0
28	22	8	0	68	54	8	0	900	720	0
29	23	4	0	69	55	4	0	1000	800	0
30	24	0	0	70	56	0	0			
31	24	16	0	71	56	16	0	2000	1600	0
32	25	12	0	72	57	12	0	3000	2400	0
33	26	8	0	73	58	8	0	4000	3200	0
34	27	4	0	74	59	4	0	5000	4000	0
35	28	0	0	75	60	0	0	6000	4800	0
36	28	16	0	76	60	16	0	7000	5600	0
37	29	12	0	77	61	12	0	8000	6400	0
38	30	8	0	78	62	8	0	9000	7200	0
39	31	4	0	79	63	4	0	10000	8000	0
40	32	0	0	80	64	0	0	20000	16000	0

The Price of any thing, being 17 Shillings.

Numb.	V.			N.	V.			N.	V.		
	<i>l.</i>	<i>s.</i>	<i>d.</i>								
1				41	34	17	0	81	68	17	0
2	1	14	0	42	35	14	0	82	69	14	0
3	2	11	0	43	36	11	0	83	70	11	0
4	3	8	0	44	37	8	0	84	71	8	0
5	4	5	0	45	38	5	0	85	72	5	0
6	5	2	0	46	39	2	0	86	73	2	0
7	5	19	0	47	39	19	0	87	73	19	0
8	6	16	0	48	40	16	0	88	74	16	0
9	7	13	0	49	41	13	0	89	75	13	0
10	8	10	0	50	42	10	0	90	76	10	0
11	9	7	0	51	43	7	0	91	77	7	0
12	10	4	0	52	44	4	0	92	78	4	0
13	11	1	0	53	45	1	0	93	79	1	0
14	11	18	0	54	45	18	0	94	79	18	0
15	12	15	0	55	46	15	0	95	80	15	0
16	13	12	0	56	47	12	0	96	81	12	0
17	14	9	0	57	48	9	0	97	82	9	0
18	15	6	0	58	49	6	0	98	83	6	0
19	16	3	0	59	50	3	0	99	84	3	0
20	17	0	0	60	51	0	0	100	85	0	0
21	17	17	0	61	51	17	0	200	170	0	0
22	18	14	0	62	52	14	0	300	255	0	0
23	19	11	0	63	53	11	0	400	340	0	0
24	20	8	0	64	54	8	0	500	425	0	0
25	21	5	0	65	55	5	0	600	510	0	0
26	22	2	0	66	56	2	0	700	595	0	0
27	22	19	0	67	56	19	0	800	680	0	0
28	23	16	0	68	57	16	0	900	765	0	0
29	24	13	0	69	58	13	0	1000	850	0	0
30	25	10	0	70	59	10	0				
31	26	7	0	71	60	7	0	2000	1700	0	0
32	27	4	0	72	61	4	0	3000	2250	0	0
33	28	1	0	73	62	1	0	4000	3400	0	0
34	28	18	0	74	62	18	0	5000	4250	0	0
35	29	15	0	75	63	15	0	6000	5100	0	0
36	30	12	0	76	64	12	0	7000	5950	0	0
37	31	9	0	77	65	9	0	8000	6800	0	0
38	32	6	0	78	66	6	0	9000	7650	0	0
39	33	3	0	79	67	3	0	10000	8500	0	0
40	34	0	0	80	68	0	0	20000	17000	0	0

Numb.	The Price of any thing, being 18 Shillings.											
	V.			N.	V.			N.	V.			
	<i>l.</i>	<i>s.</i>	<i>d.</i>									
2	1	16	0	41	36	18	0	81	72	18	0	
3	2	14	0	42	37	16	0	82	73	16	0	
4	3	12	0	43	38	14	0	83	74	14	0	
5	4	10	0	44	39	12	0	84	75	12	0	
6	5	8	0	45	40	10	0	85	76	10	0	
7	6	6	0	46	41	8	0	86	77	8	0	
8	7	4	0	47	42	6	0	87	78	6	0	
9	8	2	0	48	43	4	0	88	79	4	0	
10	9	0	0	49	44	2	0	89	80	2	0	
				50	45	0	0	90	81	0	0	
11	9	18	0	51	45	18	0	91	81	18	0	
12	10	16	0	52	46	16	0	92	82	16	0	
13	11	14	0	53	47	14	0	93	83	14	0	
14	12	12	0	54	48	12	0	94	84	12	0	
15	13	10	0	55	49	10	0	95	85	10	0	
16	14	8	0	56	50	8	0	96	86	8	0	
17	15	6	0	57	51	6	0	97	87	6	0	
18	16	4	0	58	52	4	0	98	88	4	0	
19	17	2	0	59	53	2	0	99	89	2	0	
20	18	0	0	60	54	0	0	100	90	0	0	
21	18	18	0	61	54	18	0	200	180	0	0	
22	19	16	0	62	55	16	0	300	270	0	0	
23	20	14	0	63	56	14	0	400	360	0	0	
24	21	12	0	64	57	12	0	500	450	0	0	
25	22	10	0	65	58	10	0	600	540	0	0	
26	23	8	0	66	59	8	0	700	630	0	0	
27	24	6	0	67	60	6	0	800	720	0	0	
28	25	4	0	68	61	4	0	900	810	0	0	
29	26	2	0	69	62	2	0	1000	900	0	0	
30	27	0	0	70	63	0	0					
31	27	18	0	71	63	18	0	2000	1800	0	0	
32	28	16	0	72	64	16	0	3000	2700	0	0	
33	29	14	0	73	65	14	0	4000	3600	0	0	
34	30	12	0	74	66	12	0	5000	4500	0	0	
35	31	10	0	75	67	10	0	6000	5400	0	0	
36	32	8	0	76	68	8	0	7000	6300	0	0	
37	33	6	0	77	69	6	0	8000	7200	0	0	
38	34	4	0	78	70	4	0	9000	8100	0	0	
39	35	2	0	79	71	2	0	10000	9000	0	0	
40	36	0	0	80	72	0	0	20000	18000	0	0	

The Price of any thing, being 19 Shillings.

Numb.	V.	N.	V.	N.	V.
	<i>l. s. d.</i>				
2	1 18 0	41	38 19 0	81	76 19 0
3	2 17 0	42	39 18 0	82	77 18 0
4	3 16 0	43	40 17 0	83	78 17 0
5	4 15 0	44	41 16 0	84	79 16 0
6	5 14 0	45	42 15 0	85	80 15 0
7	6 13 0	46	43 14 0	86	81 14 0
8	7 12 0	47	44 13 0	87	82 13 0
9	8 11 0	48	45 12 0	88	83 12 0
10	9 10 0	49	46 11 0	89	84 11 0
		50	47 10 0	90	85 10 0
11	10 9 0	51	48 9 0	91	86 9 0
12	11 8 0	52	49 8 0	92	87 8 0
13	12 7 0	53	50 7 0	93	88 7 0
14	13 6 0	54	51 6 0	94	89 6 0
15	14 5 0	55	52 5 0	95	90 5 0
16	15 4 0	56	53 4 0	96	91 4 0
17	16 3 0	57	54 3 0	97	92 3 0
18	17 2 0	58	55 2 0	98	93 2 0
19	18 1 0	59	56 1 0	99	94 1 0
20	19 0 0	60	57 0 0	100	95 0 0
21	19 19 0	61	57 19 0	200	190 0 0
22	20 18 0	62	58 18 0	300	285 0 0
23	21 17 0	63	59 17 0	400	380 0 0
24	22 16 0	64	60 16 0	500	475 0 0
25	23 15 0	65	61 15 0	600	570 0 0
26	24 14 0	66	62 14 0	700	665 0 0
27	25 13 0	67	63 13 0	800	760 0 0
28	26 12 0	68	64 12 0	900	855 0 0
29	27 11 0	69	65 11 0	1000	950 0 0
30	28 10 0	70	66 10 0		
31	29 9 0	71	67 9 0	2000	1900 0 0
32	30 8 0	72	68 8 0	3000	2850 0 0
33	31 7 0	73	69 7 0	4000	3800 0 0
34	32 6 0	74	70 6 0	5000	4750 0 0
35	33 5 0	75	71 5 0	6000	5600 0 0
36	34 4 0	76	72 4 0	7000	6500 0 0
37	35 3 0	77	73 3 0	8000	7600 0 0
38	36 2 0	78	74 2 0	9000	8550 0 0
39	37 1 0	79	75 1 0	10000	9500 0 0
40	38 0 0	80	76 0 0	20000	19000 0 0

An Explanation of the Table of Trade.

First, it begins at 2 in the first Column, and runs to 40, which Column is mark'd with *N*. The second Column sheweth the Value of each Number under 40, in Pence and Farthings: The third Column begins at 41, and goeth to 80, mark'd at Top with *N*. The fourth Column sheweth the Value of the same in Shillings, Pence, and Farthings. The fifth Column begins at 81, and goeth to 100, then 200, then 300, &c. to 20000: The sixth Column sheweth the Value of the same in Pounds, Shillings, Pence, and Farthings; and thus every Column, the Numbers are mark'd with *N*. and the Price or Value with *V*. The first three Pages is the Price, at one, two, and three Farthings; the fourth Page is one Penny; and so every Page encreaseth, as 2 Pence, 3 Pence, &c. to eleven Pence, and then it begins at one Shilling, and goeth to 10 Shillings, where it endeth; the Use Followeth.

To work Reduction by the Table.

In 649 Farthings how many Pounds.

First seek 600 in the Table, under 1 Farthing, and in the next Column, under *V*. and right against 600 is 12 Shillings 6 Pence, and right against 49 is 1 Shilling and a Farthing, which added to 12 Shillings 6 Pence, makes 13 Shillings 6 Pence Farthing. See the Work in the Margin.

s.	d.
12.	6
1.	0
n 13.	6

In 4672 Farthings, how many Pounds?

Seek 4000 under *N.* and right against it, is 4 *l.* 3 *s.* 4 *d.* and right against 600 is 12 *s.* 6 *d.* and right against 72 is 1 *s.* 6 *d.* which three Sums added together is 4 *l.* 17 *s.* 4 *d.* See the Work.

<i>l.</i>	<i>s.</i>	<i>d.</i>
4.	3.	4
	12.	6
	1.	6
4.	17.	4

In 1424 Pence, how many Pounds?

Seek 1000 under 1 Penny at Top of the Table, and right against it, is 4 *l.* 3 *s.* 4 *d.* and right against 400 is 1 *l.* 13 *s.* 4 *d.* and right against 24 is 2 Shillings, which added together makes 5 *l.* 18 *s.* 6 *d.* See the Work.

<i>l.</i>	<i>s.</i>	<i>d.</i>
4.	3.	4
	1.	13.
		2.
		0
5.	18.	8

In 987 two Pences, how many Pounds?

Seek 900 under 2 Pence at top of the Table, and right against it, is 7 *l.* 10 *s.* 0 *d.* and right against 87 is 14 *s.* 6 *d.* which added together is 8 *l.* 4 *s.* 6 *d.* See the Work.

<i>l.</i>	<i>s.</i>	<i>d.</i>
7.	10.	0
	14.	6
8.	4.	6

In

In 696 three half Pence, how many Pounds ?

Seek 600 under 1 Penny, and right against it, is 2 l. 10 s. 0 d. and right against 96 is 0 l. 8 s. 0 d. and right against 600, under 2 Farthings, is 1 l. 5 s. 0 d. and right against 96 is 4 Shillings, which added is 4 l. 7 s. 0 d. See the Work.

l.	s.	d.
2.	10.	0
0.	8.	0
1.	5.	0
0.	4.	0
4.	7.	0

In 2924 four Pence half Penny, how many Pounds ?

Seek 2000 under 4 Pence, and right against it is

And right against 900 is

And right against 24 is

And right against 2000, under 2 Farthings, is

And right against 900 is

And right against 24 is

l.	s.	d.
33.	6.	8
15.	0.	0
0.	8.	0
4.	3.	4
1.	17.	6
0.	1.	0
54.	16.	6

Which added is

54. 16. 6

And thus you may find the Value of any Coin, in Pounds, Shillings, and Pence.

To reduce Pounds into Shillings, Pence, and Farthings.

In 65 Pounds, how many Pence ?

Seek

Seek 41 l. 13 s. 4 d. the next less Number under Value, and on the left Hand is 10000, then subtract 41 l. 13 s. 4 d. from 65, remains 23 l. 6 s. 8 d. which done, find the next less Number in the Table; which is 20 l. 16 s. 8 d. and on the left Hand is 5000; then subtract 20 l. 16 s. 8 d. from 23 l. 6 s. 8 d. and the Remainder is 2 l. 10 s. 0 d. then find 2 l. 10 s. 0 d. in the Table, and on the left Hand is 600, then add all the left hand Numbers, 10000, and 5000, and 600, together, and they make 15600.

In 24 Pound, how many Pence?

First seek in the Table, the next Number, under 24 Pounds, which is 20 l. 16 s. 8 d. which subtract from 24 Pounds, and the Remainder is 3 l. 3 s. 4 d. now right against 20 l. 16 s. 8 d. is 5000, on the left Hand, which set down; then seek the Remainder in the Table, or the next to it, which is 2 l. 18 s. 4 d. and on the left Hand is 700, which place under 5000, then subtract 2 l. 18 s. 4 d. from the first Remainder 3 l. 3 s. 4 d. and the Remainder is 5 Shillings, which seek in the Table, and on the left Hand is 60, which place under the former, which three Sums added together, is 5760, for the Answer.

In 602 Pounds, how many Shillings?

Seek the next less Number, which is 500 Pound, and on the left Hand is 10000, which set down; now 500 Pounds subtracted from 602 Pounds, there remains 102 Pounds; then right against 100 Pounds, on the left Hand, is 2000, and right against 2 Pounds, on the left Hand, is 40; which three Sums added

added together, that is, 10000, 2000, and 40, is
12040.

10000

2000

40

 12040

In 16 Pounds, how many Shillings?

Now because 16 Pounds is not in the Table, I take 15 Pounds, in the Table, and 1 Pound, and right against 15 Pounds is 300, and right against 1 Pound is 20, which added makes 320 Shillings, for the Answer.

Here I will lay down a very easy Rule, either to reduce Pounds into Shillings, or Shillings into Pounds.

And first, To reduce Pounds into Shillings; double the Pounds, and place a Nothing on the right Hand.

Example.

In 69 Pounds how many Shillings?

The Double of 69 is 138, then place a Nothing on the right Hand, and it is 1380, for the Answer.

To reduce Shillings into Pounds.

Cut off the first Figure on the right Hand, and take half the Remainder, and it is done.

Example.

In 6249 Shillings, how many Pounds?

Cut off the 9, then the Half of 6 is 3, and the half of 2 is 1, and the Half of 4 is 2: So that in 6249 Shillings there is 312 l. 9 s.

624|9

 312. 9

These

These few *Examples* duly consider'd, with a little Practice, you may easily reduce any Sum out of one Denomination into another, only by *Addition* and *Subtraction*.

Proceed I now to the Reduction of Weight and Measure.

And first, Of *Averdupois* Weight, which is of most Use of any, for by this Weight is weighed all Manner of Goods, except Bread, Gold, and Silver, which is weighed by *Troy* Weight, and the *Apothecaries* Drugs, which is a Weight reduced from *Troy* Weight, which is of little Use for Country Tradesmen, and therefore shall pass them by.

But before I treat of Reduction of *Averdupois* Weight, I shall here draw a *Table* for that Purpose, and shew its Use, as followeth.



*A Table turning Hundreds and Quarters into Pounds;
and the Contrary.*

		6		12		18	
$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	28 56 84	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	700 728 756	$\frac{1}{4}$ $\frac{2}{4}$ 4	1372 1400 1428	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	2044 2072 2100
1	112	7	784	13	1456	19	2128
$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	140 168 196	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	812 840 868	$\frac{1}{4}$ $\frac{2}{4}$ 3	1484 1512 1540	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	2156 2184 2212
2	224	8	896	14	1568	20	2240
$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	252 280 308	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	924 952 980	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	1596 1624 1652	4 $\frac{2}{4}$ $\frac{3}{4}$	2268 2296 2324
3	336	9	1008	15	1680	21	2352
$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	364 392 420	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	1036 1064 1092	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	1708 1736 1764	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	2380 2408 2436
4	448	10	1120	16	1792	22	2464
$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	476 504 532	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	1148 1176 1204	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	1820 1848 1876	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	2492 2520 2548
5	560	11	1232	17	1904	23	2576
$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	588 616 644	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	1260 1288 1316	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	1932 1960 1988	$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$	2604 2632 2660
6	672	12	1344	18	2016	24	2688

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The Explanation of the Table of Averdupois-Weight.

The First Column is Hundreds and Quarters, the Second is the Number of Pounds, the Third is Hundreds and Quarters, the Fourth is Pounds, and so on, thro' the Table; that is, the First, Third, Fifth, and Seventh, are Hundreds and Quarters, beginning at $\frac{1}{4}$, and ending at 24 Hundred. The Figures on the right Hand of the Column are Pounds.

The Use followeth.

Example 1.

In 8 C. 3 qr. 24 p. how many Pound? First seek 8. $\frac{3}{4}$, and right against it, is 980, to which add the 24 Pounds, and it makes 1004, for the Answer.

Example 2.

In 4 C. $\frac{1}{4}$ 19 p. how many Pound?

Seek 4. $\frac{1}{4}$. as before, and right against it is 476, to which add 19 Pound, and it makes 495, for the Answer.

Here note, if it be even Hundreds and Quarters, there is nothing to be added, for it is only the odd Pounds above the Hundreds is added to the Number in the Table.

Example 3:

In 17 C. $\frac{3}{4}$. 5 p. how many Pound?

Right against 17. $\frac{3}{4}$. is 1988, to which add the odd 5 Pounds, and it makes 1993, for the Answer.

To reduce Pounds into Hundreds and Quarters.

In 1324 Pound, how many Hundreds ?

Seek the next lesser Number in the Table, which is 1316, which subtracted from 1324, the Remainder is 8 Pound, and the Figures on the left hand Page is 11 C. $\frac{2}{4}$. So the Answer is 11 C. $\frac{2}{4}$ 8 Pound.

Example 2.

In 1984 Pound, how many Hundreds ?

Seek 1960, the next less Number, and right against it, is 17 C. $\frac{2}{4}$. then subtract 1960, the Number in the Table, from the given Number, and there remains 24 Pound, which added to 17 C. $\frac{2}{4}$ is 17 C. $\frac{2}{4}$ 24 p.



To reduce Hogsheads
into Gallons, and
Gallons into Hogf-
heads, by this Table.

Hb.	Gall.	Hb	Gall.
1	63	26	1638
2	126	27	1701
3	189	28	1764
4	252	29	1827
5	315	30	1890
6	378	31	1953
7	441	32	2016
8	504	33	2079
9	567	34	2142
10	630	35	2205
11	693	36	2268
12	756	37	2331
13	819	38	2394
14	882	39	2457
15	945	40	2520
16	1008	41	2583
17	1071	42	2646
18	1134	43	2709
19	1197	44	2772
20	1260	45	2835
21	1323	46	2898
22	1386	47	2961
23	1449	48	3024
24	1512	49	3087
25	1575	50	4150

The Use of this Table.

In 14 Hogsheads how many Gallons?

Seek 14 under *Hb.* and in the next Column, towards the right Hand, is 882 Gallons.

In 22 Hogsheads 42 Gallons, how many Gallons?

Seek 22 under *Hb.* and in the next Column, under *Gall.* is 1386, to which add 42, and it makes 1428, for the Answer.

In 1928 Gallons, how many Hogsheads?

Seek 1701, the next less Number, and on the left Hand is 27 Hogsheads; then subtract 1701 from 1928, and there remains 227 Gallons: So that in 1928 Gallons is 27 Hogsheads and 27 Gallons over.

In 5 Tuns how many Gallons?

Here note, that four Hogf-head is a Tun of Wine, or Liquor.

So

So then by this little Table, seek 5 on the left Hand, and on the Right is 20 Hogheads, which in the Table foregoing makes 1260 Gallons, for the Answer.

In 7 Tuns 2 Hogheads and 17 Gallons, how many Gallons?

In this little Table 7 Tuns is 28 Hogheads, to which add 2 Hogheads, and it makes 30, which seek in the other Table, and right against it, is 1890, to which add 17, the odd Gallons, and it makes 1907 Gallons.

More *Examples* is needless, these being so easy.
This little Table serves to reduce Tuns into Hogheads.

Come we now to work that excellent *Rule*, call'd the *Golden-Rule*; and for its excellent Use, is worthy to be written in Letters of Gold; which Rule is easily performed by the foregoing Table, by the Help of Tables of *Reduction*, last treated of, and is as followeth.

If 1 Pound of Cheese cost 3 Pence, what cost 24 Pound?

Seek 3 Pence on the Top of the Table, and right against 24, on the Side, under *N.* is 6 Shillings under *V.* so that 24 Pound, at 3 pence a Pound, is 6 Shillings.

If a pound of Lead cost 2 pence, what cost 87 pound?

Seek 2 on the Head, and right against 87, under *V.* is 14 Shillings and 6 pence, for the Answer.

If a pound of Raisons cost 4 pence $\frac{1}{2}$, what cost 59 Pound?

T.	Hb.
1.	4
2.	8
3.	12
4.	16
5.	20
6.	24
7.	28
8.	32
9.	36
10.	40
11.	44
12.	48

Seek

Seek 4 pence at top, and 59 under *N.* and right against it is 19 s. 8 d. then seek 2 Farthings at the top, and 59 under *N.* and right against it is 2 s. 5 d. which added to the former, makes 1 l. 2 s. 1 d. $\frac{1}{2}$.

If 1 pound of Butter cost 5 d. $\frac{1}{4}$, what Cost 1 C. 1 qr. 7. p. ?

First, in the Table of *Averdupois-Weight*, to reduce Hundreds and Quarters into Pounds. Seek 1 *H.* 1 qr. and right against it is 140, to which add the 7 pound, and it makes 147 pound: Then in the Table of *Trade*, seek 5 pence at top, and right against 100 is 2 l. 1 s. 8 d. and right against 47 is 19 s. 7 d. then seek 1 Farthing at top, and right against 100 is 2 s. 1 d. and right against 47 is 11 d. $\frac{3}{4}$. which added together is 3 l. 4 s. 3 d. $\frac{3}{4}$. for the Answer.

If a pound of Honey cost 4 d. $\frac{1}{2}$, what cost 2 hundred Weight ?

Seek 2 hundred, and right against it is 224 pound, then enter the Table of *Commerce* or *Trade*, with 4 pence on the top, and right against 200, is 3 l. 6 s. 8 d. and against 24 is 8 Shillings; and under 2 Farthings, right against 200, is 8 s. 4 d. and against 24 is 1 Shilling; which added together makes 4 l. 4 s. 0 d. See the Work.

<i>l.</i>	<i>s.</i>	<i>d.</i>
3	6	8
0	8	0
0	8	4
0	1	0

4 4 0

If a Gallon of Wine cost 6 s. 8 d. what cost 5 Hogsheads ?

First

First in the Table to turn Hogsheads into Gallons, seek 5 Hogsheads, and right against it is 315: Then in the Table of Trade, seek 6 Shillings at top, and right against 300 is 90 Pounds, and right against 15, is 4 pounds 10 shillings, and under 8 pence at top, right against 300, is 10 pounds, and right against 15 is 10 shillings; which added together is 105 pounds: See the Work.

<i>l.</i>	<i>s.</i>	<i>d.</i>
90	0	0
4	10	0
10	0	0
0	10	0

105	0	0
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If a Foot of Timber cost 10 pence, what cost 4 Load?

First, one Load is 50 Foot, which set down four times, and it makes 200 Foot; then in the Table of Trade, seek 200, under 10 pence at top, and right against it, is 8 *l.* 6 *s.* 8 *d.* for the Answer.

50
50
50
50

200

If a Bushel of Wheat cost 6 *s.* 2 *d.* what cost 3 Load?

First set down 40 Bushels 3 times, and it is 120; then in the Table of Trade, under 6 shillings at top, right against 100 is 30 pounds, and against 20, is 6 pounds, and under 2 pence at top, against 100, is 16 shillings and 8 pence, and against 20, is 3 shillings and 4 pence; which added is 37 pounds.

40
40
40

120

30	0	0
6	0	0
0	16	8
0	3	4

37	0	0
----	---	---

If a Foot of square Timber cost 10 pence, what cost 7 Load 12 Foot?

Here

Here note, 50 Foot of square Timber is a Load, so 7 Load is 7 fifties, therefore take half seven, and it makes 3 hundred and 50; then in the Table of Trade, right against 300, and 10 pence on the top, is 12 l. 10 s. and against 54 is 2 l. 1 s. 8 d. which added is 14 l. 11 s. 8 d. for the Answer.

If a Yard of Cloth cost 3 s. 2 d. what cost 57 Yards?

In the Table of Trade, under 3 shillings at top, and 57, under *Number*, is 8 l. 11 s. and under 2 pence at top, and 57 under *N.* is 9 s. 6 d. which added, is 9 l. 0 s. 6 d.

If a pound and a half of Cheese cost 4 pence, what cost 98 pound?

First double 98, and it makes 196, which is half pounds; then in the Table of Trade, enter the Table with 4 pence on the top, and take out the Value of it, which is 1 l. 13 s. 4 d. and against 96 is 1 l. 12 s. 0 d. which added is 3 l. 5 s. 4 d. now the half part of it is 1 l. 12 s. 8 d.

Practical Questions.

A Man went to Market to buy Cheese, and when he came there, Cheese was sold for 2 pence 3 farthings a pound, and he was minded to buy 49 pound, how much Money did it cost him?

In the table of *Trade*, under 2 pence at top, and against 49 is 8 s. 2 d. and under 3 farthings is 3 shillings and 3 farthings, which added is 11 s. 2 d. $\frac{3}{4}$.

An *Oylman* bought a Hoghead of Oyl, and gave 4 s. 6 d. per Gallon, what did it cost him?

One Hoghead is 63 Gallons; right against, under 4 shillings, is 12 l. 12 s. and against 63, under 6 pence, is 1 l. 11 s. 6 d. which added is 14 pounds 3 shillings and 6 pence.

A *Vintner* bought a tun of Wine for 6 shillings a Gallon, what did he give for the whole Tun ?

A Tun is 4 Hogheads, which by the Table of *Liquid-Measure*, is 252 Gallons : Then in the Table of *Trade*, under 6 shillings 200 Gallons, is 60 pounds, and against 52 is 15 l. 12 s. which added is 75 l. 12 s. 0.

An *Ironmonger* bought 14 hundred of Iron, at 2 pence per pound, what did it cost him ?

14 hundred, by the table of reducing hundreds into pounds, is 1568, which in the Table of *Trade*, under 2 pence at top 1000, is 8 l. 6 s. 8 d. and against 500 is 4 3 4 and against 68 is 11 4

which added is

13 1 4

A *Merchant* bought 12 C. 4. 12 p. of Cheese, at 2 pence a pound, what did it cost him ?

In the table of reducing Hundreds and Quarters into pounds, against $12\frac{1}{4}$, is 1372, to which I add 12 pound, and it is 1384 pounds, under 2 pence, in the table of *Trade*, against 1000 is 8 l. 6 s. 8 d. against 300 is 2 l. 10 s. 0 d. and against 84 is 14 s. 0 d. which added is 11 l. 10 s. 8 d.

To work the Rule of Practice by this Table, with Ease.

89 pound of Cheese at 2 d. $\frac{1}{4}$. what is the Value ?

Seek 89 pound, in the Table of *Trade*, under 2 pence, against 89 is 14 s. 10 d. and against 89, under 1 Farthing is 1 s. 10 d. $\frac{1}{4}$. which added is 16 s. 8 d. $\frac{1}{4}$.

What is 69 pound of Butter, at 5 d. $\frac{3}{4}$. the pound ?

Against 69, under 5 pence is 1 l. 8 s. 9 d. and against 69 under 3 Farthings is 4 s. 3 d. $\frac{3}{4}$. which added is 1 l. 13 s. 0 d. $\frac{3}{4}$. What

What is 125 pounds of Iron, at 2 pence the pound?

Under 2 pence at top, against 100, is 16 s. 8 d. and against 25 is 4 s. 2 d. which added is 1 l. 0 s. 10 d.

What is 7 C. 1 qr. 5 p. at 5 pence the pound?

7 C. 1 qr. is 812, and 5 added is 817 pound, and in the Table of Trade, under 5 pence, against 80, is 16. 13. 4. and against 17 is 7 s. 1 d. which added is 17 l. 0 s. 5 d.

What is 142 Yards of Cloth, at 3 s. 3 d. the Yard?

Under 3 shillings, against 100, is 15. 0. 0. and against 42 is 6 l. 6 s. 0 d. and against 100, under 3 pence, is 1 l. 5 s. 0 d. and against 42 is 10 s. 6 d. which added is 23 l. 1 s. 6 d.

249 Ells of Cloth, at 1 s. 3 d. the Ell, what is the Value?

Under 1 shilling, against 200, is 10 l. and against 49 is 2 l. 9 s. and under 3 pence, against 200 is 2 l. 10 s. and against 49 is 12 s. 3 d. which added is 15 l. 11 s. 3 d.

What is the Value of 7 Hogheads of Wine, at 7 s. 2 d. per Gallon?

In the Table of Liquid Measure 7 hogheads is 441 Gallons; then in the table of Trade, under 7 shillings, against 400, is 140 l. and against 41 is 14 l. 7 s. and under 2 pence, against 400, is 3 l. 6 s. 8 d. and against 41 is 6 s. 10 d. which added is 158 l. 0 s. 6 d.

What is 5 Quarters of Malt, at 3 s. 6 d. per Bushel?

5 Quarters is 40 Bushel, and under 3 shillings, against 40 is 6 pound, and under 6 pence, against 40 is 1 pound, which added is 7 pounds.

What does the Excise of 16 Hogheads of Beer come to, at 4 d. $\frac{2}{3}$ per Gallon?

In the table of *Liquid-Measure*, 16 Hogsheads is 1608 Gallons: Under 4 pence in the table of Trade against 1000 is 16 *l.* 13. *s.* 4 *d.* and against 8 is 2 *s.* 8 *d.* and under 2 Farthings, against 1000, is 2 *l.* 1 *s.* 8 *d.* and against 8 is 4 pence, which added is 18 *l.* 18 *s.* 0 *d.*

What is 6240 Foot of Board, at 1 *d.* $\frac{1}{2}$ the Foot?

Under 1 penny against 6000, is 25 *l.* and against 200 is 16 *s.* 8 *d.* and against 40 is 3 *s.* 4 *d.* and under 2 Farthings, against 6000 is 12 *s.* 10 *d.* and against 200 is 8 *s.* 4 *d.* and against 40 is 1 *s.* 8 *d.* which added is 39 pounds.

What is the Value of 900 Foot of Timber, at 10 pence the Foot?

Under 10 pence, against 900 is 37 *l.* 10 *s.*

Thus much for the Rule of *Practice*.

Innumerable Questions may be done thereby.

Loss and Gain is worked with Ease by these Tables.

A Merchant bought 429 pound of Cotton for 1 Shilling a pound, and sold it again for 1 *s.* 2 *d.* how much did he gain by it?

Subtract 1 Shilling from 1 *s.* 2 *d.* and the Remainder is 2 pence, for the Gains of 1 pound; then in the table of Trade, under 2 pence, against 400 is 3 *l.* 6 *s.* 8 *d.* and against 29 is 4 *s.* 10 *d.* which added is 3 *l.* 11 *s.* 6 *d.*

A Vintner bought 4 Hogsheads of Wine, for 5 *s.* 6 *d.* a Gallon, and sold it again for 6 Shillings, what did he gain by the 4 Hogsheads?

Subtract 5 *s.* 6 *d.* from 6 Shillings, there remains 6 pence, for the gains of one Gallon; then in the table of *Liquid-Measure* 4 Hogsheads is 252 Gallons; then

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in the Table of *Trade*, under 6 pence against 200 is 5 pound, and against 52 is 1 l. 6 s. 0 d. which added is 6 l. 6 s. 0 d.

A *Draper* bought 729 Ells of Cloth, and gave 1 s. 2 d. per Ell, and sold it again for 1 s. 5 d. an Ell, how much did he gain by the whole ?

He gained 3 pence per Ell : Now in the Table of *Trade*, under 3 pence, against 700 is 8 l. 15 s. 0 d. and against 29 is 7 s. 3 d. which added is 9 l. 2 s. 3 d.

A *Cheesemonger* bought 12 hundred of Cheese for 2 d. $\frac{1}{4}$. a pound, and sold it again for 2 d. $\frac{3}{4}$. how much did he gain by the whole ?

His Gain was 2 Farthings a pound. The 12 hundred by the Table of *Averdupois-weight*, is 1344 pound ; now in the Table of *Trade*, under 2 Farthings, against 1000 is 2 l. 1 s. 8 d. and against 300 is 12 s. 6 d. and against 44 is 1 s. 10 d. which added is 2 l. 16 s. 0 d.

A *Factor* bought of a *Malster* 10 Quarters of Malt, and gave 3 s. 4 d. per Bushel, and gained 3 d. per Bushel, how much did it cost him, and what was his Gain ?

10 Quarters is 80 Bushels, which in the Table of *Trade*, under 3 Shillings, and against 80 is 12 pound, and under 4 pence, against 80 is 1 l. 6 s. 8 d. which added is 13 l. 6 s. 8 d. it cost him.

And for the Gain, under 3 pence, against 80 is 1 l. 0 s. 0 d. for the Gain.

A *Vintner* bought a Tun of Wine for 6 s. 8 d. a Gallon, and it leaked out 19 Gallons, what did it cost him, and what was his Loss ?

1 Tun is 4 Hogsheads, which in the Table of *Liquid-Measure* is 252 Gallons ; now in the Table of *Trade* under 6 Shillings, against 200 is 60 pound, and against 52 is 15 l. 12 s. and under 8 pence against

200 is 6 *l.* 13 *s.* 4 *d.* and against 52 is 1 *l.* 14 *s.* 8 *d.* which added is 84 pounds, what it cost him; now in the Table of Trade under 6 Shillings, against 19 is 5 *l.* 14 *s.* and under 8 pence against 19 is 12 *s.* 8 *d.* which added is 6 *l.* 6 *s.* 8 *d.* for his Loss.

A *Timber-Merchant* bought 20 Load of Timber, and gave for it 10 pence a Foot, and sold it again for 8 pence a Foot, how much did he lose by it?

20 Load is 1000 Foot, and he lost 2 pence by every Foot; now in the Table of Trade, under 2 pence against 1000 is 8 *l.* 6 *s.* 8 *d.* and so much he lost.

If I buy 4 hundred of Iron for 2 pence a pound, and sell it again for 2 *d.* $\frac{1}{4}$. how much do I gain?

In the Table of *Averdupois-weight* 4 hundred is 448 pound, and in the Table of Trade under 1 Farthing, against 400 is 8 *s.* 4 *d.* and against 48 is 1 *s.* which added is 9 *s.* 4 *d.* for the Gain.

Thus much for *Loss* and *Gain*.

The Rule of Barter is work'd by these Tables.

A and *B* barter'd; *A* had 4 hundred of Sugar at 3 pence a pound; *B* had Butter at 5 pence a pound, how much Butter must *B* give *A* for his Sugar?

4 hundred of Sugar is 448 pound; at 3 pence a pound is 5 *l.* 12 *s.* by the Table of Trade; then seek 4 *l.* 3 *s.* 4 *d.* the next less Number, in the Table of Trade, and against it is 200; then subtract 4 *l.* 3 *s.* 4 *d.* from 5 *l.* 12 *s.* the Remainder is 1 *l.* 8 *s.* 8 *d.* then seek 1 *l.* 8 *s.* 4 *d.* and against it is 68, which added to 200 is 268 pound of Butter and a Groat remains; so *A* must have 268 pounds of Butter and a Groat ready Money.

I shall end this Book, with a very convenient Rule, and that is, *To make Parish Rates by the Table of Trade.*

First, divide the Parish into Tythings, then state every Farm at as much, or as many Pounds a Year as the *Vestry* think fit; then set each Man's Name to his Farm, with the Number of Pounds the Farm is rated at, which done, cast up all the Farms, and see what it amounts to; as for *Example*.

Suppose a Parish is rated at 1784 pounds a-Year, and the Rate must be made for 20 pounds, I must make it 3 pence to the pound;

	<i>l.</i>	<i>s.</i>	<i>d.</i>
For 1000 3 pences is	12	10	00
7 hundred 3 pences is	08	15	00
84 3 pences is	01	01	00

The total Sum is 22 06 00

Which is 26 Shillings Over-plus, for Bye-uses.

Then I proceed to make the Book or Rate under 3 pence, I seek in each Farm the Number of Pounds, and right against it is the Money ready cast up; as for *Example*.

	<i>l.</i>	<i>s.</i>	<i>d.</i>
72 pounds is	0	18	0
97 pounds is	1	4	3
27 pounds is	0	6	9
7 pounds is	0	1	9
54 pounds is	0	13	6
17 pounds is	0	4	3
99 pounds is	1	4	9
140 pounds is	1	15	0
100 pounds is	1	5	0
40 pounds is	0	10	0

which added is

8 03 3
And

And thus you may figure a Book or Rate by this Table as fast as you please.

And thus have I finish'd the most useful Book in the World, as by due Perusing will be plainly seen.

This is an *Appendix to The Excise-man's Companion ; or the Art of Measuring with Ease.*



A Table turning Square Feet into Yards.

Feet	Yds.	Feet	Yds.	Feet	Yds.	Feet	Yds.
9	1	279	31	549	61	819	91
18	2	288	32	558	62	828	92
27	3	297	33	567	63	837	93
36	4	306	34	576	64	846	94
45	5	315	35	585	65	855	95
54	6	324	36	594	66	864	96
63	7	333	37	603	67	873	97
72	8	342	38	612	68	882	98
81	9	351	39	621	69	891	99
90	10	360	40	630	70	900	100
99	11	369	41	639	71	909	101
108	12	378	42	648	72	918	102
117	13	387	43	657	73	927	103
126	14	396	44	666	74	936	104
135	15	405	45	675	75	945	105
144	16	414	46	684	76	954	106
153	17	423	47	693	77	963	107
162	18	432	48	702	78	972	108
171	19	441	49	711	79	981	109
180	20	450	50	720	80	990	110
189	21	459	51	729	81	999	111
198	22	468	52	738	82	1008	112
207	23	477	53	747	83	1017	113
216	24	486	54	756	84	1026	114
225	25	495	55	765	85	1035	115
234	26	504	56	774	86	1044	116
243	27	513	57	783	87	1053	117
252	28	522	58	792	88	1062	118
260	29	531	59	801	89	1071	119
270	30	540	60	810	90	1080	120

Subtract the next lesser Number in the Table from any Number of Square Feet, and the Remainder is Feet: And the Number under Yards shews the square Yard.

Example. How many Yards is there in 859 Feet? Subtract 855, which is 95 Yards, from 859, there remains 4 Feet, that is, 95 Yards four Feet.

A Table turning Rods into Acres and Quarters.

Rod	A.	Q.	R.	Rod	A.	Q.	R.	Rod	A.	Q.	R.	Rods.	A.	Q.	R.
10			10	330	2	0	10	650	4	0	10	970	6	0	10
20			20	340			20	660			20	980			20
30			30	350			30	670			30	990			30
40		$\frac{1}{4}$		360	2	$\frac{1}{4}$	0	680	4	$\frac{1}{4}$	0	1000	6	$\frac{1}{4}$	0
50			10	370			10	690			10	1010			10
60			20	380			20	700			20	1020			20
70			30	390			30	710			30	1030			30
80		$\frac{1}{4}$		400	2	$\frac{3}{4}$	0	720	4	$\frac{3}{4}$	0	1040	6	$\frac{3}{4}$	0
90			10	410			10	730			10	1050			80
100			20	420			20	740			20	1060			20
110			30	430			30	750			30	1070			30
120		$\frac{1}{4}$		440	2	$\frac{1}{4}$	0	760	4	$\frac{1}{4}$	0	1080	6	$\frac{1}{4}$	0
130			10	450			10	770			10	1090			10
140			20	460			20	780			20	1100			20
150			30	470			30	790			30	1110			30
160	1	0	0	480	3	0	0	800	5	0	0	1120	7	0	0
170			10	490			10	810			10	1130			10
180			20	500			20	820			20	1140			20
190			30	510			30	830			30	1150			30
200	1	$\frac{1}{4}$	0	520	3	$\frac{1}{4}$	0	840	5	$\frac{1}{4}$	0	1160	7	$\frac{1}{4}$	0
210			10	530			10	850			10	1170			10
220			20	540			20	860			20	1180			20
230			30	550			30	870			30	1190			30
240	1	$\frac{1}{4}$	0	560	3	$\frac{3}{4}$	0	880	5	$\frac{3}{4}$	0	1200	7	$\frac{3}{4}$	0
250			10	570			10	890			10	1210			10
260			20	580			20	900			20	1220			20
270			30	590			30	910			30	1230			30
280	1	$\frac{1}{4}$	0	600	3	$\frac{1}{4}$	0	920	5	$\frac{1}{4}$	0	124	7	$\frac{1}{4}$	0
290			10	610			10	930			10	1250			10
300			20	620			20	940			20	1260			20
310			30	630			30	950			30	1270			30
320	2	0	0	640	4	0	0	960	6	0	0	128	8	0	0

*A Table Turning Rods, into Acres, an^a
Quarters.*

Rods.	A.	Q.	R.	Rods.	A.	Q.	R.	Rods.	A.	Q.	R.	Rods.	A.	Q.	R.
1290	8	0	10	1610	10	0	10	1930	12	0	10	2250	14	0	10
1300			20	1620			20	1940			20	2260			20
1310			30	1630			30	1950			30	2270			30
1320	8	$\frac{1}{4}$	0	1640	10	$\div$	0	1960	12	$\frac{1}{4}$	0	2280	14	$\frac{1}{4}$	0
1330			10	1650			10	1970			10	2290			10
1340			20	1660			20	1980			20	2300			20
1350			30	1670			30	1990			30	2310			30
1360	8	$\frac{1}{4}$	0	1680	10	$\frac{1}{4}$	0	2000	12	$\frac{1}{4}$	0	2320	14	$\frac{1}{4}$	0
1370			10	1690			10	2010			10	2330			10
1380			20	1700			20	2020			20	2340			20
1390			30	1710			30	2030			30	2350			30
1400	8	$\frac{1}{4}$	0	1720	10	$\frac{1}{4}$	0	2040	12	$\frac{1}{4}$	0	2360	14	$\frac{1}{4}$	0
1410			10	1730			10	2050			10	2370			10
1420			20	1740			20	2060			20	2380			20
1430			30	1750			30	2070			30	2390			30
1440	9	0	0	1760	11	0	0	2080	13	0	0	2400	15	0	0
1450			10	1770			10	2090			10	2410			10
1460			20	1780			20	2100			20	2420			20
1470			30	1790			30	2110			30	2430			30
1480	9	$\frac{1}{4}$	0	1800	11	$\frac{1}{4}$	0	2120	13	$\frac{1}{4}$	0	2440	15	$\frac{1}{4}$	0
1490			10	1810			10	2130			10	2450			10
1500			20	1820			20	2140			20	2460			20
1510			30	1830			30	2150			30	2470			30
1520	9	$\frac{1}{4}$	0	1840	11	$\frac{1}{4}$	0	2160	13	$\frac{1}{4}$	0	2480	15	$\frac{1}{4}$	0
1530			10	1850			10	2170			10	2490			10
1540			20	1860			20	2180			20	2500			20
1550			30	1870			30	2190			30	2510			30
1560	9	$\frac{1}{4}$	0	1880	11	$\frac{1}{4}$	0	2200	13	$\frac{1}{4}$	0	2520	15	$\frac{1}{4}$	0
1570			10	1890			10	2210			10	2530			10
1580			20	1900			20	2220			20	2540			20
1590			30	1910			30	2230			30	2550			30
1600	10	0	0	1920	12	0	0	2240	14	0	0	2560	16	0	0

The Use of this Table.

Seek the Number in the Table next less than the Number of *Rods*, you would turn into *Acres*, and in the Columns under *A. Q. R.* you have the *Acres*, *Quarters*, and *Rods*; only the Units or Figures under ten must be added.

Example.

I would Know how many *Acres* there is in 192.7 *Rods*?

Seek the three first Figures towards the left Hand, which is 1920, and the next Column shews 12 *Acres*, and the 7 is 7 *Rod*.

Example 2

I would know how many *Acres* 2317 *Rods*?

Look out 2310 in the Table, and right against it is 14 *Acres* $\frac{1}{4}$, and 30 *Rods*; to which I add the odd 7 *Rods*, and it makes 14 *Acres*, 1 *Quarter*, 37 *Rods*.

F I N I S.



THE
Foolish PHILOSOPHY
OF
WILLIAM PAVY,
OR ELSE
FOOR Y,
OF
PUTTENHAM near GUILDFORD
IN THE
County of SURRY.

The first of *Corinthians*, first Chapter and 19 Verse, are
these Words.

*For it is written, I will destroy the Wisdom of the Wise,
and will bring to nothing the Understanding of the
Prudent.*

L O N D O N:

Printed in the YEAR, 1729.

THE
 PHILOSOPHY
 OF
 WILLIAM BAYLY
 FOR
 OF
 BUTTENHAM near GUILDFORD
 IN THE
 County of SURRY.



The first of Cambridge, first Chapter and 19 Verses, are
 these Words.
 It is written, I will destroy the Wisdom of the Wise,
 and will bring to nothing the Understanding of the
 Proud.

L O N D O N
 Printed in Great Britain, 1750.



T H E

Foolish PHILOSOPHY, &c.



WHEN it pleased the ever blessed God to create the Heavens and the Earth, and all Things therein, he did it for his own Pleasure, as we may read, *Revelations iv. 11. And he made two great Lights apparent to our View, the Sun to give Light by Day, and the Moon by Night, with the Stars also ; these were to give Light on the Earth, and it was so.*

By Earth we here mean the 'Universal Globe whereon we dwell, and it is so curiously framed, that it is beyond the Understanding of all the Wise and Learned amongst Men : For first, the Surface of it is environed round the Center, with a Multitude of Countries, both Continents and Islands, separated from each other by great Waters, called Seas, and the same furnished with all Manner of living Creatures, both in the Earth and Seas, both for the Service and Food of Men. What could God have done more for his Vineyard, which he hath not done.

But

But what is the most wonderful of all things here below, is his Omnipotency in framing the Earth, and hanging it in the Middle of the Air, by an invisible Power, and in that Posture, that from the Center to the Surface is all upward, and from every Part of the Surface, whereon Men dwell, to the Center is all downward ; so that if it were possible to make a Hole through the Earth, as through the Middle of a Ball, and a Bullet were let fall of never so big Weight, it would fall to the Center, and go no farther, but hang as in the Middle of the Air by an invisible Power : Yea, tho' there be so many hundreds of Millions of Loads of Weight, above the thoughts of Man to conceive, yet all hangs with its Weight towards the Center of the same ; the Sun, Moon, and Stars continually revolving round the same, at all Seasons of the Year ; and from every Part of the Surface of the Earth to them is upward, even from the Center thereof. The *Psalmist* cryed out, as in Amaze, to think how the Sun, Moon, and Stars, in their several Orbs and Motions, continually kept their Course, cryed out, *The Heavens declare the Glory of God, and the Firmament, sheweth his Handy-works.* Psalm xix. 1. But if we consider his Omnipotent Wisdom and Power, in his wonderful Creation, may cry out, *O how wonderful is God in his Wisdom and Power, who can understand the Secrets thereof !* And with the *Psalmist*, *What is Man ?* Therefore wisely did the Apostle, St. Paul reason, when he saith, *The Foolishness of God is wiser than Men, and the Weakness of God is stronger than Men.* 1 Cor. i. 25.

But that which I shall make the Subject of this Discourse, is the *Copernican* System of the World, which is now embraced by the Wise-Men of this Age,

Age, for that of *Ptolomy*, who made the Earth the Center of the Universe, is found to be very erroneous; for the small Revolution of *Mercury* round the Sun in his *Epicicle*, of about 27 Degrees, and *Venus* 49 Degrees, or thereabouts, rather shews that they observe the Sun for the Center thereof, than the Earth; tho' *Ptolomy*, in his time, was esteem'd the Prince of Astronomers, till Reason confuted his System; so vain is the carnal Wisdom of the Wise and Learned. Man is a finite Creature; and when finite encounter Infinite, the Difference will be found *ad infinitum*.

And as for the *Copernican* System, I come now to consider: Who makes the Sun to be the Center of the Universe, and the Earth he calls *Tellus*, and placed him between the Orb of *Venus* and *Mars*: And next to the Sun he places *Mercury*, then *Venus*, then the Earth, and the Moon the Earth's *Satellit*; then *Mars*, then *Jupiter*, then *Saturn*, then the Sphere of the Fix'd Stars, and allows no *Primum Mobile* by this System: He makes the Sun unmovable, and the Earth, and all the rest of the Planets and Stars, to move round him: Then he appoints a double Motion to the Earth, first, its diurnal Motion, whereby the Earth turns round on its Axes once in 24 hours, making or measuring out our Day and Night; and this Revolution he attributes from *West* to *East*: So that the Surface of the Earth moves 15 Miles in one Minute of time on the *Equator*, but every lesser Circle a less Number of Miles, diminishing even to the Poles, both *North* and *South*.

Secondly, he attributes to the Earth his Annual Motion, in a large Circle or Path, between *Venus* and *Mars*, in an oblique Circle, whose greatest Distance from the *Equinoctial* is 23 Degrees 29 Minutes,

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varying

varying its Motion 59 Minutes in 24 Hours; by which it makes a right Angle with the Sun, about the tenth Day of *March*, and thirteenth Day of *September*, at which time the Days and Nights are equal in all Places; but at all other times they vary, according to the *Position* and Parts of the Earth where we inhabit or dwell: Then he makes the Moon to be a *Sattellit* of the Earth, moving round it in the Space of 29 Days and a half, passing a Circle 5 Degrees oblique to the Circle of the Line of *Ecliptick*, moving about 13 Degrees in the Space of 24 Hours, finishing 13 Revolutions in one Revolution of the Earth, exceeding the Earth 11 Days, called the *Epaet*. And thus the Universe is thought to be posited, which is the Opinion of most of our learned Astrologers.

Come I now, to examine what Reason there is to embrace this *Copernican* System, more than the System of *Ptolomy*. And first, for the Earth's Motion; and first, its *Diurnal*, whereby it turns on its Axes 15 Degrees in one Hour of time: And first, be it so; then suppose I hold a Ball, or any other thing in my Hand, as the Earth turns, so I turn, and so the Ball turns in my Hand; but if I throw it up into the Air, in a perpendicular Line, for the Space of 4 Seconds of time, then I conclude it will fall one Mile towards the *West*, from the Place where it was thrown up, unless there be an attractive Motion of the Air equal to that of the Earth: And be it so, that the Air turns round with the Earth, then when the Wind is plain *East* I throw up a Feather, or such like light thing into the Air, it will certainly be carried *West*, contrary to the *Eastern* Motion of the Air, or attractive Power of the Earth; which is very contrary to all solid Reason. The se-
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cond Reason is from the Tables of Astronomical Motions of the Stars; and first of the Sun's Motion, which is 59 Minutes in 24 Hours; what Reason is there to attribute this Motion to that which is without Motion; for if the Sun be the fixed Center of the Universe, then he can have no Motion, and we must attribute the 59 Minutes to the Motion of *Tellus*, and make new Tables in *Astronomy*; for I never saw, in any Calculation, but the Sun's Place was calculated as well as the other Planets, and placed in all Figures in *Astrology*: Surely those Men that would have the Sun to be fixed, and the Earth to move, have lost their Reason, by reasoning against their own Reason; for how can any thing both move and stand still? For if it be fix'd, and stand still, it cannot move; but if it move, it cannot stand still; which all the *Philosophy* in the World can never confute. There might be many more sound Reasons brought for the Confirmation of these: But laying aside the Stile of carnal Reason: I come next to the Authority of Divinity. And first of all, the Apostle St. Peter saith, *The Prophecy came not in old time, by the Will of Man, but holy Men of God spake as they were moved by the Holy Ghost.* 2 Pet. i. 21.

First, these Men that wrote the *Old Testament*, were holy.

Secondly, They were moved by the Holy Ghost; and he that denieth this Truth is *Antichrist*; for *Peter*, doubtless, had the Spirit of *Christ* in writing his *Epistles*.

And be it so, that the Prophecies in old time were by God's Spirit, then let us hear what those Prophets have said. And first, whether the Sun or Earth is in Motion:

And first, what saith *Joshua*, and there he telleth us, the *Gibeonites* being in a Distress sent to him at *Gilgal*, *And he marched up all Night to them.* x. 9. *And the Lord discomfited the Amorites before the Children of Israel.* *And Joshua spake in that Day unto the Lord, and said, in the Sight of Israel; Sun, stand thou still upon Gibeon, and thou Moon in the Valley of Ajalon: And the Sun stood still, and the Moon stay'd.* ver. 12. 13. Surely that Great God that hearken'd to *Joshua's* Voice, would never give to him a lving Spirit, in that Day when he so mightily fought for his People; for had it been so that the Sun was fix'd, and the Earth mov'd, he might only have said, *Earth stand thou still*; and it had been enough, for we may very well conclude, the Sun to be on the *Meridian* of *Gibeon*, and the Moon in the *Meridian* of *Ajalon* at that time, seeing the Battle was in the Forenoon. This very Example might serve to confute all the carnal Policy of Human Reason. But it not being alone, let us take others along with it. *David* was said to be a Man after God's own Heart; and tho' he fell into a grievous and heinous Sin, yet his *Psalms* were pen'd by the Spirit of God; or else our Blessed Saviour would never have made use of them, saying, *David in Spirit called him Lord.* And a Multitude of Scriptures Christ and his Apostles useth out of the *Psalms*, which sheweth they were pen'd by the Holy Spirit.

And let us hear what he saith who laid the Foundation of the Earth, that it should not be removed for ever, that is, till the End of the World; and if it cannot be moved, where is her Motion? *Psal.* civ. 5. and xciii. 1. And in *Psal.* xcix. 1. he saith, *Let the Earth be moved*; but that is meant the People of the Earth, as the former part of the Verse

Verse sheweth. And Solomon saith, *One Generation passeth away, and another cometh, but the Earth abideth for ever*; that is, till the End of the World. The Sun also riseth, and the Sun goeth down, and hastneth to his Place where he arose. Eccles. i. 4, 5. Surely the Prophecies of Solomon may be credited in this Case.

But peradventure that neither Reason nor Scripture can convince Men of their Errors; I will bring one Testimony more from him that cannot lie, neither be mistaken, and that is, of Christ himself, and I hope that none will be so audacious as to gainsay it; who saith, *That God maketh the Sun to arise on the Evil, and on the Good; and sendeth Rain on the Just and Unjust*. Matt. v. 44. And he could not be mistaken in his own Handy-work. And for a farther Confirmation, I will appeal to every one's Consciences, and they shall bear Witness to this great Truth: But still if they will hold forth their Opinion, I shall conclude with this Sentence of the Scriptures, *Yea, let God be true, and every Man a Lier*. Rom. iii. 4.

Therefore, much rather do I consent to the System of Tycho, which is both agreeable to Reason and Divinity; who maketh the Earth the Center of the Sun and Moon, and the Sun the Center of the other five Planets, whose *Epicicles* moves round his Body; first *Mercury*, then *Venus*, then *Mars*, then *Jupiter*, then *Saturn*, then the Fixed Stars, and last of all, the *Primum Mobile*, or rather that immense Being, whose Power created them all, and that by *Jesus Christ*; For by him were all things made, and nothing without him, as his beloved Disciple testifieth in his Gospel, St. John i. 3. And by whose Omnipotence all the whole Host of the Heavens are carried round this Spot of Earth, called the Globe. Therefore let us not only lift up our Eyes to behold them, but
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lift up our Hearts to magnify him, who is the Author of their Being, and ascribe all Glory to him alone, and none to Creatures; the want of which made our Blessed Lord cry out, *How can you believe who receive Honour one of another?* For he that believeth not the Truth of his Word will find it too true for his own Destruction. This is the Scaffold and out-works of him, which are glorious to behold; but within are those Things which much more outshines the Sun in the Firmament as the Sun outshines the Face of Man. And now will I ascribe all Glory to Him, and none to Creatures, by my *Foolish Philosophy*.



To God only Wise, be all Glory for ever. Amen. Hallelujah.

F I N I S.



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